

Bibliography

R. Abraham and J. E. Marsden

1. *Foundations of Mechanics*, 2nd Ed., The Benjamin/Cummings Publ. Comp., Reading, 1978.

P. L. Antonelli and R. Miron

1. *Lagrange and Finsler Geometry*, P. L. Antonelli and R. Miron, eds., Kluwer, Dordrecht, 1996.

V. Aldaya and J. de Azcárraga

1. *Vector bundles, r -th order Noether invariants and canonical symmetries in Lagrangian field theory*, J. Math. Phys. **19** (1978), 1876–1880.
2. *Variational principles on r -th order jets of fibre bundles in field theory*, J. Math. Phys. **19** (1978), 1869–1875.
3. *Geometric formulation of classical mechanics and field theory*, Rev. Nuovo Cimento **3** (1980), 1–66.
4. *Higher order Hamiltonian formalism in field theory*, J. Phys. A: Math. Gen. **13** (1982), 22545–2551.

I. Anderson

1. *Aspects of the inverse problem to the calculus of variations*, Arch. Math. (Brno) **24** (1988), 181–202.
2. *The Variational Bicomplex*, Preprint, Utah State University, 1989.

I. Anderson and T. Duchamp

1. *On the existence of global variational principles*, Am. J. Math. **102** (1980) 781–867.

I. Anderson and G. Thompson

1. *The Inverse Problem of the Calculus of Variations for Ordinary Differential Equations*, Memoirs of the AMS **98**, No. 473 (1992) 110 pp.

L. C. de Andres, M. de León and P. R. Rodrigues

1. *Connections on tangent bundles of higher order*, Demonstratio Mathematica **22** (1989), 607–632.

J. Barcelos-Neto and N. R. F. Braga

1. *Symplectic analysis of a Dirac constrained theory*, J. Math. Phys. **35** (1994), 3497–3503.

C. Batlle, J. Gomis, J. M. Pons and N. Román-Roy

1. *Equivalence between the Lagrangian and Hamiltonian formalism for constrained systems*, J. Math. Phys. **27** (1986), 2953–2962.
2. *On the Legendre transformation for singular Lagrangians and related topics*, J. Phys. A: Math. Gen. **20** (1987), 5113–5123.
3. *Lagrangian and Hamiltonian constraints for second-order singular Lagrangians*, J. Phys. A: Math. Gen. **21** (1988), 2693–2703.

S. Benenti

1. *Symplectic relations in analytical mechanics*, in: *Modern Developments in Analytical Mechanics I: Geometrical Dynamics*, Proc. IUTAM-ISIMM Symposium, Torino, Italy 1982, S. Benenti, M. Francaviglia and A. Lichnerowicz, eds. (Accad. delle Scienze di Torino, Torino, 1983), 39–91.
2. *L'intégration de l'équation d'Hamilton–Jacobi par séparation des variables: histoire et résultats récents*, in: *La Mécanique Analytique de Lagrange et son héritage*, Suppl. al. No 124 (1990) Atti Accad. Sci. Torino, Torino 1990, 119–144.

D. E. Betounes

1. *Extension of the classical Cartan form*, Phys. Rev. D **29** (1984), 599–606.

R. L. Bryant, S. S. Chern, R. B. Gardner, H. L. Goldschmidt and P. A. Griffiths

1. *Exterior Differential Systems*, Springer-Verlag, New York, 1991.

F. Cantrijn

1. *On the geometry of degenerate Lagrangians*, in: *Differential Geometry and Its Applications (Communications)*, Proc. Conf., Brno, Czechoslovakia, 1986, D. Krupka and A. Švec, eds. (J. E. Purkyně University, Brno, 1986), 43–56.

F. Cantrijn, J. F. Cariñena, M. Crampin and L. A. Ibort

1. *Reduction of degenerate Lagrangian systems*, J. Geom. Phys. **3** (1986), 353–400.

F. Cantrijn and W. Sarlet

1. *Symmetries and conservation laws for generalized Hamiltonian systems*, Int. J. Theor. Phys. **20** (1981), 645–670.

C. Carathéodory

1. *Über die Variationsrechnung bei mehrfachen Integralen*, Acta Szeged **4** (1929), 193–216.

J. F. Cariñena

1. *Theory of singular Lagrangians*, Fortschr. Phys. **38** (1990), 641–679.

J. F. Cariñena, J. Fernández-Núñez

1. *Geometric theory of time-dependent singular Lagrangians*, Fortschr. Phys. **41** (1993), 517–552.

J. F. Cariñena and L. A. Ibort

1. *Geometric theory of equivalence of Lagrangians for constrained systems*, J. Phys. A: Math. Gen. **18** (1985), 3335–3341.

J. F. Cariñena and C. López

1. *The time-evolution operator for higher-order singular Lagrangians*, Int. J. Mod. Phys. A **7** (1992), 2447–2468.

J. F. Cariñena, C. López and E. Martínez

1. *Sections along a map applied to higher-order Lagrangian mechanics. Noether's Theorem*, Acta Appl. Math. **25** (1991), 127–151.

J. F. Cariñena, C. López and M. F. Rañada

1. *Geometric Lagrangian approach to first-order systems and applications*, J. Math. Phys. **29** (1988), 1134–1142.

J. F. Cariñena, C. López and N. Román-Roy

1. *Geometric study of the connection between the Lagrangian and Hamiltonian constraints*, J. Geom. Phys. **4** (1987), 315–334.
2. *Origin of the Lagrangian constraints and their relation with the Hamiltonian formulation*, J. Math. Phys. **29** (1988), 1143–1149.

J. F. Cariñena, E. Martínez and J. Fernández-Núñez

1. *Noether's theorem in time-dependent Lagrangian mechanics*, Rep. Math. Phys. **31** (1992), 189–203.

J. F. Cariñena and M. F. Rañada

1. *Blow-up regularization of singular Lagrangians*, J. Math. Phys. **25** (1984), 2430–2435.
2. *Noether's theorem for singular Lagrangians*, Lett. Math. Phys. **15** (1988), 305–311.
3. *Non-linear generalization of the gauge ambiguities of the Lagrangian formalism*, Int. J. Mod. Phys. A **6** (1991), 737–748.
4. *Lagrangian systems with constraints: a geometric approach to the method of Lagrange multipliers*, J. Phys. A: Math. Gen. **26** (1993), 1335–1351.

É. Cartan

1. *Leçons sur les Invariants Intégraux*, Hermann, Paris, 1922.

R. Cawley

1. *Determination of the Hamiltonian in the presence of constraints*, Phys. Rev. Lett. **42** (1979), 413–416.

M. Chaichian and D. L. Martinez

1. *On the Noether identities for a class of systems with singular Lagrangians*, J. Math. Phys. **35** (1994), 6536–6545.

D. Chinea, M. de León and J. C. Marrero

1. *The constraint algorithm for time-dependent Lagrangians*, J. Math. Phys. **35** (1994), 3410–3447.

J. Chrastina

1. *Formal Calculus of Variations on Fibered Manifolds*, J. E. Purkyně University, Brno, 1989.

M. Crampin, W. Sarlet and F. Cantrijn

1. *Higher order differential equations and higher order Lagrangian mechanics*, Math. Proc. Camb. Phil. Soc. **99** (1986), 565–587.

M. Crampin, W. Sarlet, E. Martínez, G. B. Byrnes and G. E. Prince

1. *Towards a geometrical understanding of Douglas's solution of the inverse problem of the calculus of variations*, Inverse Problems **10** (1994), 245–260.

G. Darboux

1. *Leçons sur la théorie générale des surfaces et les applications géométriques du calcul infinitésimal*, Paris, 1899.

P. Dedecker

1. *Sur les intégrales multiples du Calcul des Variations*, Compt. rend. du IIIe congrès Nat. des Sci., Bruxelles, 1950, 29–35.
2. *Calcul des variations, formes différentielles et champs géodésiques*, in: Coll. internat. du C.N.R.S., Strasbourg, 1953 (C.N.R.S. Paris, 1954), 17–34.

3. *Calcul des Variations et Topologie Algébrique*, Thesis, Univ. de Liège, Faculté des Sciences, 1957.
4. *On the generalization of symplectic geometry to multiple integrals in the calculus of variations*, in: *Lecture Notes in Math.* **570** (Springer, Berlin, 1977), 395–456.
5. *Intégrales complètes de l'équation aux dérivées partielles de Hamilton-Jacobi d'une intégral multiple*, C. R. Acad. Sci. Paris **285**, Sér. A (1977), 123–126.
6. *Problèmes variationnelles dégénérés*, C. R. Acad. Sci. Paris **286**, Sér. A (1978), 547–550.
7. *Le théorème de Helmholtz-Cartan pour une intégrale simple d'ordre supérieur*, C. R. Acad. Sci. Paris **288**, Sér. A (1979), 827–830.
8. *Existe-t-il, en calcul des variations, un formalisme de Hamilton-Jacobi-E. Cartan pour les intégrales multiples d'ordre supérieur?*, C. R. Acad. Sci. Paris **298**, sér. 1 (1984), 397–400.

P. Dedecker and W. M. Tulczyjew

1. *Spectral sequences and the inverse problem of the calculus of variations*, Internat. Coll. on Diff. Geom. Methods in Math. Phys., Salamanca 1979, in: *Lecture Notes in Math.* **836** (Springer, Berlin, 1980), 498–503.

P. A. M. Dirac

1. *Generalized Hamiltonian dynamics*, Canad. J. Math. **II** (1950), 129–148.

V. V. Dodonov, V. I. Manko and V. D. Skarzhinsky

1. *Nuovo Cim. B* (1982) **69**, 185–205.

D. Dominici and J. Gomis

1. *Poincaré-Cartan integral invariant and canonical transformations for singular Lagrangians*, J. Math. Phys. **21** (1980), 2124–2130.
2. D. Dominici and J. Gomis, *Poincaré-Cartan integral invariant and canonical transformations for singular Lagrangians: An addendum*, J. Math. Phys. **23** (1982), 256–257.

D. Dominici, G. Longhi, J. Gomis and J. M. Pons

1. *Hamilton-Jacobi theory for constrained systems*, J. Math. Phys. **25** (1984), 2439–2452.

Th. De Donder

1. *Théorie Invariantive du Calcul des Variations*, Gauthier-Villars, Paris, 1930.

J. Douglas

1. *Solution of the inverse problem of the calculus of variations*, Trans. Amer. Math. Soc. **50** (1941), 71–128.

S. V. Duzhin and V. V. Lychagin

1. *Symmetries of distributions and quadrature of ordinary differential equations*, Preprint.

Ch. Ehresmann

1. *Sur la théorie des espaces fibrés*, in: *Topologie Algébrique* (Éditions du CNRS, Paris, 1947), 3–35.
2. *Les connections infinitésimales dans un espace fibré différentiable*, in: *Coll. Topologie*, Bruxelles 1950 (Liège, 1951), 29–55.
3. *Les prolongements d'une variété différentiable: 1. Calcul des Jets, prolongement principal*, C. R. Acad. Sci. Paris **233** (1951), 598–600.
4. *Extension du calcul des Jets aux Jets non-holonomes*, C. R. Acad. Sci. Paris **239** (1954), 1762–1764.
5. *Applications de la notion de Jet non-holonyme*, C. R. Acad. Sci. Paris **240** (1955), 397–399.

6. *Les prolongements d'une space fibré différentiable*, C. R. Acad. Sci. Paris **240** (1955), 1755–1757.

E. Engels and W. Sarlet

1. *General solution and invariants for a class of Lagrangian equations governed by a velocity-dependent potential energy*, J. Phys. A: Math. Gen. **6** (1973), 818–825.

C. Ferrario and A. Passerini

1. *Symmetries and constants of motion for constrained Lagrangian systems: a presymplectic version of the Noether theorem*, J. Phys. A: Math. Gen. **23** (1990), 5061–5081.
2. *Dynamical symmetries in constrained systems: a Lagrangian analysis*, J. Geom. Phys. **9** (1992), 121–148.

M. Ferraris

1. *Fibered connections and global Poincaré–Cartan forms in higher order calculus of variations*, in: *Geometrical Methods in Physics*, Proc. Conf. on Diff. Geom. and Appl. Vol. 2, Nové Město na Moravě, Sept. 1983, D. Krupka, ed. (J. E. Purkyně Univ. Brno, Czechoslovakia, 1984), 61–91.

M. Ferraris and M. Francaviglia

1. *On the global structure of the Lagrangian and Hamiltonian formalisms in higher order calculus of variations*, in: *Geometry and Physics*, Proc. Int. Meeting, Florence, Italy 1982, M. Modugno ed. (Pitagora Ed., Bologna, 1983), 43–70.
2. *On the globalization of the Lagrangian and Hamiltonian formalisms in higher order mechanics*, in: *Modern Developments in Analytical Mechanics I: Geometrical Dynamics*, Proc. IUTAM-ISIMM Symposium, Torino, Italy 1982, S. Benenti, M. Francaviglia and A. Lichnerowicz eds. (Accad. delle Scienze di Torino, Torino, 1983), 109–125.

C. A. P. Galvão and N. A. Lemos

1. *On the quantization of constrained generalized dynamics*, J. Math. Phys. **29** (1988), 1588–1592.

P. L. Garcia

1. *The Poincaré–Cartan invariant in the calculus of variations*, Symposia Math. **14** (1974), 219–246.

P. L. Garcia and J. Muñoz

1. *On the geometrical structure of higher order variational calculus*, in: *Modern Developments in Analytical Mechanics I: Geometrical Dynamics*, Proc. IUTAM-ISIMM Symposium, Torino, Italy 1982, S. Benenti, M. Francaviglia and A. Lichnerowicz eds. (Accad. delle Scienze di Torino, Torino, 1983), 127–147.

P. L. Garcia and A. Pérez-Rendón

1. *Symplectic approach to the theory of quantized fields, II*, Arch. Rational Mech. Anal. **43** (1971), 101–124.

I. M. Gelfand and L. A. Dikii

1. *The asymptotics of the resolvent of the Sturm–Liouville equations and the algebra of the Korteweg–de-Vries equation*, Uspekhi Mat. Nauk **30** (1975), 67–100.

G. Giachetta

1. *Jet methods in nonholonomic mechanics*, J. Math. Phys. **33** (1992), 1652–1665.

M. Giaquinta and S. Hildebrandt

1. *Calculus of Variations, I, II*, Springer, Berlin, 1996.

C. Godbillon

1. *Géométrie Différentielle et Mécanique Analytique*, Hermann, Paris, 1969.

H. Goldschmidt and S. Sternberg

1. *The Hamilton–Cartan formalism in the calculus of variations*, Ann. Inst. Fourier, Grenoble **23** (1973), 203–267.

J. Gomis, J. Llosa and N. Román

1. *Lee Hwa Chung theorem for presymplectic manifolds. Canonical transformations for constrained systems*, J. Math. Phys. **25** (1984), 1348–1355.

M. J. Gotay

1. *On the validity of Dirac's conjecture regarding first-class secondary constraints*, J. Phys. A: Math. Gen. **16** (1983), L141–L145.
2. *An exterior differential systems approach to the Cartan form*, in: Proc. Internat. Colloquium "Géométrie Symplectique et Physique Mathématique", P. Donato, C. Duval, J. Elhadad and G. M. Tuynman, eds. (Birkhäuser, Boston, 1991).

M. J. Gotay and J. M. Nester

1. *Presymplectic Lagrangian systems I: the constraint algorithm and the equivalence theorem, II: the second order equation problem*, Ann. Inst. H. Poincaré, Sect. A, **30** (1979), 129–142; **32** (1980), 1–13.

M. J. Gotay, J. M. Nester and G. Hinds

1. *Presymplectic manifolds and the Dirac–Bergmann theory of constraints*, J. Math. Phys. **19** (1978), 2388–2399.

X. Gràcia, J. M. Pons and N. Román-Roy

1. *Higher order Lagrangian systems: Geometric structures, dynamics and constraints*, J. Math. Phys. **32** (1991), 2744–2763.

P. A. Griffiths

1. *Exterior Differential Systems and the Calculus of Variations*, Progress in Math. **25**, Birkhäuser, Boston, 1983.

J. Grifone

1. *Structure presque-tangente et connexions, I.*, Ann. Inst. Fourier, Grenoble **22** (1972), 287–334.

D. R. Grigore

1. *Generalized Lagrangian dynamics and Noetherian symmetries*, Int. J. Mod. Phys. A **7** (1992), 7153–7168.
2. *Higher order Lagrangian theories and Noetherian symmetries*, to be published in Roum. J. Phys.
3. *Variationally trivial Lagrangians and locally variational differential equations of arbitrary order*, Preprint, 1997.

D. R. Grigore and O. T. Popp

1. *On the Lagrange–Souriau form in classical field theory*, to be published in Math. Bohemica.

L. Haine

1. *La suite spectrale d'Euler-Lagrange*, Sem. Math. Pure, Inst. de Math. Pure et Appl., Université Catholique de Louvain (1980), XIII, 1–31.

P. Havas

1. *The range of application of the Lagrange formalism I*, Nuovo Cimento Suppl. **5** (1957), 363–388.
2. *The connection between conservation laws and invariance groups: folklore, fiction, and fact*, Acta Phys. Austr. **38** (1973), 145–167.

C. F. Hayes and J. M. Jankowski

1. *Quantization of generalized mechanics*, Nuovo Cimento B **58** (1968), 494–497.

H. Helmholtz

1. *Ueber die physikalische Bedeutung des Prinzips der kleinsten Wirkung*, J. für die reine u. angewandte Math. **100** (1887), 137–166.
2. *Das Prinzip des kleinsten Wirkung in der Elektrodynamik*, Wied. Ann., Bd. XLVII (1892), 1–25; Wiss. Abh., Bd. III (J. Barth, Leipzig, 1895), 476–504.
3. *Studien zur Statik monocyklischer Systeme*, Wiss. Abh., Bd. III (J. Barth, Leipzig, 1895), 119–141.
4. *Die physikalische Bedeutung des Prinzips der kleinsten Wirkung*, Wiss. Abh., Bd. III (J. Barth, Leipzig, 1895), 207.

M. Henneaux

1. *Equations of motion, commutation relations and ambiguities in the Lagrangian formalism*, Ann. Phys. **140** (1982), 45–64.
2. *On the inverse problem of the calculus of variations*, J. Phys. A **15** (1982), L93–L96.

M. Henneaux and L. C. Shepley

1. *Lagrangians for spherically symmetric potentials*, J. Math. Phys. **23** (1982), 2101–2107.

R. Hermann

1. *Differential Geometry and the Calculus of Variations*, Academic Press, New York, 1968.

D. Hilbert

1. *Die Grundlagen der Physik*, Götting. Nachrichten **1** (1915), 395.

R. Hojman, S. Hojman and J. Sheinbaum

1. *Shortcut for constructing any Lagrangian from its equations of motion*, Phys. Rev. D **28** (1983), 1333–1336.

S. A. Hojman, L. C. Shepley

1. *No Lagrangian? No quantization!*, J. Math. Phys. **32** (1991), 142–146.

S. Hojman and L. F. Urrutia

1. *On the inverse problem of the calculus of variations*, J. Math. Phys. **22** (1981), 1896–1903.

M. Horák and I. Kolář

1. *On the higher order Poincaré–Cartan forms*, Czechoslovak Math. J. **33** (108) (1983), 467–475.

J. Hrivňák

1. *Symmetries and first integrals in higher-order mechanics*, Thesis, Silesian University, Opava, 1995 (in Czech).

R. Jackiw

1. (Constrained) quantization without tears, in: *Constraint Theory and Quantization Methods*, F. Colomo, L. Lusanna and G. Marmo, eds. (World Scientific, Singapore, 1994), 163–175.

Y. Kaminaga

1. *Quantum mechanics of higher derivative systems and total derivative terms*, J. Phys. A: Math. Gen. **29** (1996), 5049–5088.

H. A. Kastrup

1. *Canonical theories of Lagrangian dynamical systems in physics*, Phys. Rep. **101** (1983), 1–167.

J. Kijowski

1. *On a new variational principle in general relativity and the energy of the gravitational field*, Gen. Rel. Grav. **9** (1978), 857–877.

L. Klapka

1. *Integrals of motion and semiregular Lepagean forms in higher order mechanics*, J. Phys. A: Math. Gen. **16** (1983), 3783–3794.
2. *Euler–Lagrange expressions and closed two-forms in higher order mechanics*, in: *Geometrical Methods in Physics*, Proc. Conf. on Diff. Geom. and Appl. Vol. 2, Nové Město na Moravě, Sept. 1983, D. Krupka, ed. (J. E. Purkyně Univ. Brno, Czechoslovakia, 1984) 149–153.

J. Klein

1. *Geometry of sprays. Lagrangian case. Principle of least curvature*, in: *Modern Developments in Analytical Mechanics I: Geometrical Dynamics*, Proc. IUTAM-ISIMM Symposium, Torino, Italy 1982, S. Benenti, M. Francaviglia and A. Lichnerowicz, eds. (Accad. delle Scienze di Torino, Torino, 1983), 177–196.
2. *On variational second order differential equations*, in: Proc. Conf. on Differential Geometry and Its Applications, August 1992, Opava (Czechoslovakia), O. Kowalski and D. Krupka, eds. (Silesian University, Opava, Czech Republic, 1993), 449–459.

J. Koiller

1. *Reduction of some classical non-holonomic systems with symmetry*, Arch. Rational Mech. Anal. **118** (1992), 113–148.

I. Kolář

1. *Some geometric aspects of the higher order variational calculus*, in: *Geometrical Methods in Physics*, Proc. Conf. on Diff. Geom. and Appl. Vol. 2, Nové Město na Moravě, Sept. 1983, D. Krupka, ed. (J. E. Purkyně University, Brno, Czechoslovakia, 1984), 155–166.
2. *A geometric version of the higher order Hamilton formalism in fibered manifolds*, J. Geom. Phys. **1** (1984), 127–137.

I. Kolář, P. W. Michor and J. Slovák

1. *Natural Operators in Differential Geometry*, Springer, Berlin, 1993.

D. Krupka

1. *Some geometric aspects of variational problems in fibered manifolds*, Folia Fac. Sci. Nat. UJEP Brunensis **14** (1973), 1–65.
2. *A geometric theory of ordinary first order variational problems in fibered manifolds. I. Critical sections, II. Invariance*, J. Math. Anal. Appl. **49** (1975), 180–206; 469–476.
3. *A map associated to the Lepagean forms of the calculus of variations in fibered manifolds*, Czechoslovak Math. J. **27** (1977), 114–118.

4. *On the local structure of the Euler-Lagrange mapping of the calculus of variations*, in: Proc. Conf. on Diff. Geom. and Its Appl. 1980, O. Kowalski, ed. (Universita Karlova, Prague, 1981), 181–188.
5. *Lepagean forms in higher order variational theory*, in: *Modern Developments in Analytical Mechanics I: Geometrical Dynamics*, Proc. IUTAM-ISIMM Symposium, Torino, Italy 1982, S. Benenti, M. Francaviglia and A. Lichnerowicz, eds. (Accad. delle Scienze di Torino, Torino, 1983), 197–238.
6. *On the higher order Hamilton theory in fibered spaces*, in: *Geometrical Methods in Physics*, Proc. Conf. on Diff. Geom. and Appl., Vol. 2, Nové Město na Moravě, Sept. 1983, D. Krupka, ed. (J. E. Purkyně University, Brno, Czechoslovakia, 1984), 167–183.
7. *Regular lagrangians and Lepagean forms*, in: *Differential Geometry and Its Applications*, Proc. Conf., Brno, Czechoslovakia, 1986, D. Krupka and A. Švec, eds. (D. Reidel, Dordrecht, 1986), 11–148.
8. *Geometry of Lagrangean structures 2, 3*, Arch. Math. (Brno) **22** (1986), 211–228; Proc. 14th Winter School on Abstract Analysis, Jan. 1986, Srní (Czechoslovakia), Suppl. ai rend. del Circ. Mat. di Palermo **14** (1987), 178–224.
9. *Variational sequences on finite order jet spaces*, in: *Differential Geometry and Its Applications*, Proc. Conf., Brno, Czechoslovakia, 1989, J. Janyška and D. Krupka, eds. (World Scientific, Singapore, 1990), 236–254.
10. *Topics in the calculus of variations: Finite order variational sequences*, in: Proc. of the 5th International Conference on Differential Geometry and Its Applications, August 1992, Opava, Czechoslovakia, O. Kowalski and D. Krupka, eds. (Silesian University, Opava, Czech Republic, 1993), 473–495.
11. *The contact ideal*, Diff. Geom. Appl. **5** (1995), 257–276.
12. *Lectures on Variational Sequences*, Open Education and Sciences, Opava, 1995.
13. *Variational sequences in mechanics*, Calculus of Variations and PDE, to be published.

D. Krupka and J. Musilová

1. *Hamilton extremals in higher order mechanics*, Arch. Math. (Brno) **20** (1984), 21–30.
2. *Trivial Lagrangians in field theory*, Diff. Geom. Appl., to be published.

D. Krupka, A. E. Sattarov

1. *The inverse problem of the calculus of variations for Finsler structures*, Math. Slovaca **35** (1985), 217–222.

D. Krupka and O. Štěpánková

1. *On the Hamilton form in second order calculus of variations*, in: *Geometry and Physics*, Proc. Int. Meeting, Florence, Italy 1982, M. Modugno, ed. (Pitagora Ed., Bologna, 1983), 85–102.

O. Krupková

1. *A note on the Helmholtz conditions*, in: *Differential Geometry and Its Applications*, Proc. Conf., August 1986, Brno, Czechoslovakia (J. E. Purkyně University, Brno, Czechoslovakia, 1986), 181–188.
2. *Lepagean 2-forms in higher order Hamiltonian mechanics, I. Regularity, II. Inverse problem*, Arch. Math. (Brno) **22** (1986), 97–120; **23** (1987), 155–170.
3. *Hamilton-Jacobi distributions*, Preprint, Dept. of Math., Masaryk University, Brno, 1990.
4. *Variational analysis on fibered manifolds over one-dimensional bases*, Thesis, Silesian University, Opava, 1992, 67 pp.
5. *On the inverse problem of the calculus of variations for ordinary differential equations*, Math. Bohemica **118** (1993), 261–276.

6. *Liouville and Jacobi theorems for vector distributions*, in: Proc. of the 5th International Conference on Differential Geometry and Its Applications, August 1992, Opava, Czechoslovakia, O. Kowalski and D. Krupka, eds. (Silesian University, Opava, 1993), 75–87.
7. *A Geometric Theory of Variational Ordinary Differential Equations*, Preprint, Silesian University, Opava, 1993, 89 pp.; Thesis, Silesian University, Opava, 1995, 165 pp.
8. *Variational metrics on $R \times TM$ and the geometry of nonconservative mechanics*, Math. Slovaca, **44** (1994), 315–335.
9. *A geometric setting for higher order Dirac–Bergmann theory of constraints*, J. Math. Phys. **35** (1994), 6557–6576.
10. *Symmetries and first integrals of time-dependent higher-order constrained systems*, J. Geom. Phys. **18** (1996), 38–58.
11. *Higher-order constrained systems on fibered manifolds: An exterior differential systems approach*, in: *New Developments in Differential Geometry*, J. Tamássy and J. Szenthe, eds. (Kluwer, Dordrecht, 1996), 255–278.
12. *Noether theorem and first integrals of constrained Lagrangean systems*, Math. Bohemica, to be published.
13. *Mechanical systems with non-holonomic constraints*, J. Math. Phys. **38** (1997), to be published.

O. Krupková and A. Vondra

1. *On some integration methods for connections on fibered manifolds*, in: Proc. of the 5th International Conference on Differential Geometry and Its Applications, 1992, Opava, Czechoslovakia, O. Kowalski and D. Krupka, eds. (Silesian University, Opava, 1993), 89–101.

U. Kulshreshtha

1. *Hamiltonian formulation of a theory with constraints*, J. Math. Phys. **33** (1992), 633–638.

B. Kupershmidt

1. *Geometry of jet bundles and the structure of Lagrangian and Hamiltonian formalisms*, in: *Lecture notes in Math.* **775** (Springer-Verlag, Berlin, 1980), 162–217.

M. de León and D. M. de Diego

1. *Classification of symmetries for higher order Lagrangian systems II: the non-autonomous case*, Extracta Mathematicae **8** (1994), 111–114.
2. *Symmetries and constants of the motion for higher order Lagrangian systems*, J. Math. Phys. **36** (1995), 4138–4161.
3. *On the geometry of non-holonomic Lagrangian systems*, J. Math. Phys. **37** (1996) 3389–3414.

M. de León, D. M. de Diego and P. Pitanga

1. *A new look at degenerate Lagrangian dynamics from the viewpoint of almost product structures*, J. Phys. A: Math. Gen **28** (1995), 4951–4971.

M. de León, J. Marín-Solano and J. C. Marrero

1. *The constraint algorithm in the jet formalism*, Diff. Geom. Appl. **6** (1996), 275–300.

M. de León and J. C. Marrero

1. *Degenerate time-dependent Lagrangians of second order: the fourth order differential equation problem*, in: Proc. 5th Int. Conf. on Differential Geometry and Its Applications, 1992, Opava, Czechoslovakia, O. Kowalski and D. Krupka, eds. (Silesian Univ., Opava, 1993), 497–508.

M. de León, J. C. Marrero and D. M. de Diego

1. *Constrained time-dependent Lagrangian systems and Lagrangian submanifolds*, J. Math. Phys. **34** (1993), 622–644.

2. *Time-dependent mechanical systems with non-linear constraints*, in: Proc. Conf. on Diff. Geom., Budapest, 1996, to be published.
3. *Non-holonomic Lagrangian systems in jet manifolds*, J. Phys. A: Math. Gen. **30** (1997), 1167–1190.

M. de León and P. R. Rodrigues

1. *Generalized Classical Mechanics and Field Theory*, North-Holland, Amsterdam, 1985.
2. *Almost tangent geometry and higher order mechanical systems*, in: *Differential Geometry and Its Applications*, Proc. Conf., Brno, Czechoslovakia, 1986, D. Krupka and A. Švec, eds. (D. Reidel, Dordrecht, 1986), 179–195.
3. *Methods of Differential Geometry in Analytical Mechanics*, North-Holland, Amsterdam, 1989.

Th. Lepage

1. *Sur les champs géodésiques du Calcul des Variations*, Bull. Acad. Roy. Belg., Cl. des Sciences **22** (1936), 716–729.

P. Libermann

1. *Sur quelques propriétés des variétés symplectiques*, in: Proc. Conf. on Diff. Geom. and Its Appl. 1980, O. Kowalski, ed. (Universita Karlova, Prague, 1981), 137–159.
2. *Symplectically regular foliations*, in: *Modern Developments in Analytical Mechanics I: Geometrical Dynamics*, Proc. IUTAM-ISIMM Symposium, Torino, Italy 1982, S. Benenti, M. Francaviglia and A. Lichnerowicz, eds. (Accad. delle Scienze di Torino, Torino, 1983), 239–246.
3. *Lie algebroids and mechanics*, Arch. Math. (Brno) **32** (1996) 147–162.

P. Libermann and Ch.-M. Marle

1. *Symplectic Geometry and Analytical Mechanics*, Mathematics and Its Applications, D. Reidel, Dordrecht, 1987.

L. Lusanna

1. *Classical observables of gauge theories from the multitemporal approach*, Contemporary Math. **132** (1992), 531–549.

V. Lychagin

1. *Lectures on Geometry of Differential Equations, Part I, Part II*, Consiglio Nazionale delle Ricerche (G.N.F.M.), Roma, 1992.

L. Mangiarotti and M. Modugno

1. *Fibered spaces, jet spaces and connections for field theories*, Proc. of the Meeting “Geometry and Physics”, 1982, Florence (Pitagora, Bologna, 1982), 135–165.
2. *Some results on the calculus of variations on jet spaces*, Ann. Inst. H. Poincaré **39** (1983), 29–43.

Yu. I. Manin

1. *Algebraic aspects of non-linear differential equations*, Itogi nauki i tekhniki (VINITI, Ser. Sovremennye problemy matematiki) **11** (1979), 5–152 (in Russian).

C. M. Marle

1. *Contact manifolds, canonical manifolds and the Hamilton-Jacobi method in analytical mechanics*, in: *Modern Developments in Analytical Mechanics I: Geometrical Dynamics*, Proc. IUTAM-ISIMM Symposium, Torino, Italy 1982, S. Benenti, M. Francaviglia and A. Lichnerowicz eds. (Accad. delle Scienze di Torino, Torino, 1983), 255–272.

2. *Reduction of constrained mechanical systems and stability of relative equilibria*, Comm. Math. Phys. **174** (1995), 295–318.

G. Marmo, G. Mendella, W. M. Tulczyjew

1. *Symmetries and constants of the motion for dynamics in implicit form*, Ann. Inst. Henri Poincaré, Phys. Theor. **57** (1992), 147–166.

E. Martínez, J. F. Cariñena, W. Sarlet

1. *Derivations of differential forms along the tangent bundle projection I, II*, Diff. Geom. Appl. **2** (1992), 17–43; **3** (1993), 1–29.

M. Marvan

1. *On global Lepagean equivalents*, in: *Geometrical Methods in Physics*, Proc. Conf. on Diff. Geom. and Appl. Vol. 2, Nové Město na Moravě, Czechoslovakia, 1983, D. Krupka, ed. (J. E. Purkyně University, Brno, 1984), 185–190.

M. Matsumoto

1. *Foundations of Finsler Geometry and Special Finsler Spaces*, Kaiseisha Press, Shigaken, 1986.

A. Mayer

1. *Die Existenzbedingungen eines kinetischen Potentials*, Ber. Ver. Ges. d. Wiss. Leipzig, Math.-Phys. Kl. **48** (1896), 519–529.

S. G. Mikhlin

1. *Variational Methods in Mathematical Physics*, Nauka, Moscow, 1970 (in Russian).

H. Minkowski

1. Nachr. d. K. Gesellsch. d. Wissensch. zu Göttingen, Math.-Phys. Kl. (1908), 53–111.

R. Miron

1. *Spaces with higher order metric structures*, Tensor **53** (1993), 1–23.

R. Miron and M. Anastasiei

1. *The Geometry of Lagrange Spaces: Theory and Applications*, Kluwer, Dordrecht, 1994.

R. Miron and G. Atanasiu

1. *Compendium sur les espaces Lagrange d'ordre supérieur*, Preprint, Univ. Timisoara, 1994.
2. *Differential geometry of the k -osculator bundle*, Rev. Roum. Math. Pure et Appl. **XLI** (1996), 205–236.
3. *Prolongation of Riemannian, Finslerian and Lagrangian structures*, Rev. Roum. Math. Pure et Appl. **XLI** (1996), 237–250.
4. *Higher order Lagrange spaces*, Rev. Roum. Math. Pure et Appl. **XLI** (1996), 251–262.

M. Modugno

1. *Torsion and Ricci tensor for non-linear connections*, Diff. Geom. Appl. **1** (1991), 177–192.

P. Morando and S. Pasquero

1. *Singular Lagrangians and the Hamel-Appell system*, Acta Mechanica **96** (1993), 55–66.

J. Musilová

1. *Variational sequence in higher-order mechanics*, in: Proc. Conf. Diff. Geom. Appl., August 1995, Brno, Czech Republic, J. Janyška and I. Kolář, eds. (Masaryk Univ., Brno, 1996), 611–624.

V. V. Nesterenko

1. *Singular Lagrangians with higher derivatives*, J. Phys A: Math. Gen. **22** (1989), 1673–1687.

V. V. Nesterenko and A. M. Chervyakov

1. *Some properties of constraints in theories with degenerate lagrangians*, Theor. Math. Phys. **64** (1985), 82–91 (in Russian).

E. Noether

1. *Invariante Variationsprobleme*, Nachr. kgl. Ges. Wiss. Göttingen, Math. Phys. Kl. (1918), 235–257.

T. Nôno and F. Mimura

1. *Dynamical symmetries, I*, Bull. Fukuoka Univ. of Education **25** (1976), 9–26.

J. Novotný

1. *On the inverse variational problem in the classical mechanics*, in: Proc. Conf. on Diff. Geom. and Its Appl. 1980, O. Kowalski, ed. (Universita Karlova, Prague, 1981), 189–195.
2. *On the geometric foundations of the Lagrange formulation of general relativity*, in: *Differential Geometry*, Coll. Math. Soc. J. Bolyai 31, Budapest, 1979 (North-Holland, Amsterdam, 1982), 503–509.

P. J. Olver

1. *Equivalence and the Cartan form*, Acta Appl. Math. **31** (1993), 99–136.

Z. Oziewicz

1. *Classical mechanics: inverse problem and symmetries*, Rep. Math. Phys. **22** (1985), 91–111.

Z. Oziewicz and W. Gruhn

1. *On Jacobi's theorem*, Hadronic J. **6** (1983), 1579–1605.

H. Poincaré

1. *Sur la dynamique de l'électron*, Rend. Pal. **21** (1906), 129.

J.-F. Pommaret

1. *Spencer sequence and variational sequence*, Acta Appl. Math., to be published.

M. F. Rañada

1. *Extended tangent bundle formalism for time dependent Lagrangian systems*, J. Math. Phys. **32** (1991), 500–505.
2. *Alternative Lagrangians for central potentials*, J. Math. Phys. **32** (1991), 2764–2769.
3. *Extended Legendre transformation approach to the time-dependent Hamiltonian formalism*, J. Phys. A: Math. Gen. **25** (1992), 4025–4035.
4. *Time-dependent Lagrangian systems: A geometric approach to the theory of systems with constraints*, J. Math. Phys. **35** (1994), 748–758.

R. Ray

1. *Lagrangians and systems they describe—how not to treat dissipation in quantum mechanics*, Am. J. Phys. **47** (1979), 626–629.

K. Rektorys

1. *Variational Methods in Engineering and Mathematical Physics*, SNTL, Prague, 1974 (in Czech).

N. Román-Roy

1. *Dynamics of constrained systems*, Int. J. Theor. Phys. **27** (1988), 427–431.

H. Rund

1. *A Cartan form for the field theory of Carathéodory in the calculus of variations of multiple integrals*, Lect. Notes in Pure and Appl. Math. **100** (1985), 455–469.

Y. Saito, R. Sugano, T. Ohta and T. Kimura

1. *A dynamical formalism of singular Lagrangian system with higher derivatives*, J. Math. Phys. **30** (1989), 1122.
2. *Addendum to a dynamical formalism of singular Lagrangian system with higher derivatives*, J. Math. Phys. **34** (1993), 3775–3779.

W. Sarlet

1. *On the transition between second-order and first-order systems within the context of the inverse problem of the Newtonian mechanics*, Hadronic J. **2** (1979), 407–432.
2. *The Helmholtz conditions revisited: A new approach to the inverse problem of Lagrangian dynamics*, J. Phys. A **15** (1982), 1503–1517.
3. *Noether's Theorem and the inverse problem of Lagrangian mechanics*, in: *Modern Developments in Analytical Mechanics*, Proc. IUTAM-ISIMM Symposium, Torino, Italy 1982, S. Benenti, M. Francaviglia and A. Lichnerowicz, eds. (Accad. delle Scienze di Torino, Torino, 1983), 737–751.
4. *Symmetries, first integrals and the inverse problem of Lagrangian mechanics I, II*, J. Phys. A: Math. Gen. **14** (1981), 2227–2238; **16** (1983), 1383–1396.
5. *Note on equivalent Lagrangians and symmetries*, J. Phys. A: Math. Gen. **16** (1983), L229–L233.
6. *Symmetries and alternative Lagrangians in higher-order mechanics*, Phys. Lett. **108A** (1985), 14–18.
7. *Geometrical structures related to second-order equations*, in: *Differential Geometry and Its Applications*, Proc. Conf., Brno, Czechoslovakia, 1986, D. Krupka and A. Švec, eds. (D. Reidel, Dordrecht, 1986), 279–288.
8. *A direct geometrical construction of the dynamics of non-holonomic Lagrangian systems*, Extracta Mathematicae **11** (1996), 202–212.
9. *The geometry of mixed first and second-order differential equations with applications to non-holonomic mechanics*, in: *Differential Geometry and Applications*, Proc. Conf., Brno, Czech Republic, 1995, J. Janyška and I. Kolář, eds., (Masaryk University, Brno, 1996), 641–650.

W. Sarlet and F. Cantrijn

1. *Generalizations of Noether's Theorem in classical mechanics*, SIAM Review **23** (1981), 467–494.
2. *Higher order Noether symetries and constants of the motion*, J. Phys. A: Math. Gen. **14** (1981), 479–492.

W. Sarlet, F. Cantrijn and M. Crampin

1. *A new look at second-order equations and Lagrangean mechanics*, J. Phys. A: Math. Gen. **17** (1984), 1999–2009.

W. Sarlet, F. Cantrijn and D. J. Saunders

1. *A geometrical framework for the study of non-holonomic Lagrangian systems*, J. Phys. A: Math. Gen. **28** (1995), 3253–3268.

W. Sarlet, A. Vandecasteele, F. Cantrijn and E. Martínez

1. *Derivations of forms along a map: the framework for time-dependent second-order equations*, Diff. Geom. Appl. **5** (1995), 171–203.

D. J. Saunders

1. *An alternative approach to the Cartan form in Lagrangian field theories*, J. Phys. A: Math. Gen. **20** (1987), 339–349.
2. *Jet fields, connections and second-order differential equations*, J. Phys. A: Math. Gen. **20** (1987), 3261–3270.
3. *The Geometry of Jet Bundles*, London Math. Soc. Lecture Notes Series 142, Cambridge Univ. Press, Cambridge, 1989.
4. *A note on Legendre transformations*, Diff. Geom. Appl. **1** (1991), 109–122.
5. *The regularity of variational problems*, in: *Mathematical Aspects of Classical Field Theory*, Proc. of the AMS-IMS-SIAM Joint Summer Research Conf. 1991, M. J. Gotay, J. E. Marsden and V. Moncrief, eds., Contemporary Math. **132** (AMS, Providence, 1992), 573–593.

D. J. Saunders, W. Sarlet and F. Cantrijn

1. *A geometrical framework for the study of non-holonomic Lagrangian systems: II*, J. Phys. A: Math. Gen. **29** (1996), 4265–4274.

R. S. Schechter

1. *The Variational Method in Engineering*, McGraw-Hill, New York, 1967.

W. F. Shadwick

1. *The Hamiltonian formulation of regular r -th order Lagrangian field theories*, Letters in Math. Phys. **6** (1982), 409–416.

V. D. Skarzhinsky

1. *Ambiguities of quantization procedure and choice of the Hamiltonian*, in: *Differential Geometry and Its Applications*, Proc. Conf., Brno, Czechoslovakia, 1986, D. Krupka and A. Švec, eds. (D. Reidel, Dordrecht, 1986), 329–338.

J. Sniatycki

1. *On the geometric structure of classical field theory in Lagrangian formulation*, Proc. Camb. Phil. Soc. **68** (1970), 475–484.

N. Ya. Sonin

1. Warsaw Univ. Izvestiya, No. 1–2 (1886), (in Russian).

J.-M. Souriau

1. *Structure des Systèmes Dynamiques*, Dunod, Paris, 1970.

J. Štefánek

1. *Odd variational sequences on finite-order jet spaces*, in: Proc. of the 5th International Conference on Differential Geometry and Its Applications, August 1992, Opava, Czechoslovakia, O. Kowalski and D. Krupka, eds. (Silesian University, Opava, 1993), 523–538.
2. *A Representation of the Variational Sequence by Forms*, Thesis, Silesian University, Opava, 1995, 36 pp.
3. *A representation of the variational sequence in higher-order mechanics*, in: Proc. Conf. on Differential Geometry and Its Applications, August 1995, Brno, J. Janyška and I. Kolář, eds. (Masaryk University, Brno, 1996), 469–478.

M. Štefanová and O. Štěpánková

1. *Variationality and invariance of systems of partial differential equations*, Scripta Fac. Sci. Nat. UJEP Brunensis **15** (Physica) (1985), 283–288.

O. Štěpánková

1. *The inverse problem of the calculus of variations in mechanics*, Thesis, Charles University, Prague, 1984, 63 pp. (in Czech).

S. Sternberg

1. *Lectures on Differential Geometry*, Prentice Hall, New York, 1964.
2. *Some preliminary remarks on the formal variational calculus of Gelfand-Dikii*, Lecture Notes in Math. **676** (Springer-Verlag, Berlin, 1978), 399–407.

E. C. G. Sudarshan and N. Mukunda

1. *Classical Dynamics: A Modern Perspective*, John Wiley & Sons, New York, 1974.

K. Sundermeyer

1. *Constrained Dynamics*, Springer-Verlag, Berlin, 1982.

H. Sussmann

1. *Orbits of families of vector fields and integrability of distributions*, Trans. Amer. Math. Soc. **180** (1973), 171–188.

W. Szczyrba

1. *On the geometric structure of the set of solutions of Einstein equations*, Dissertationes Math. **150**, Polska Akademia Nauk, Warszawa 1977.

B. Tabarrok and F. P. J. Rimrott

1. *Variational Methods and Complementary Formulations in Dynamics*, Kluwer, Dordrecht, 1994.

F. Takens

1. *A global version of the inverse problem of the calculus of variations*, J. Diff. Geom. **14** (1979), 543–562.

E. Tonti

1. *Variational formulation of nonlinear differential equations I, II*, Bull. Acad. Roy. Belg. Cl. Sci. **55** (1969), 137–165, 262–278.

A. Trautman

1. *Noether equations and conservation laws*, Comm. Math. Phys. **6** (1967), 248–261.
2. *Invariance of Lagrangian systems*, in: *General Relativity*, Papers in honour of J. L. Synge (Clarendon Press, Oxford, 1972), 85–99.

T. Tsujishita

1. *On variational bicomplex associated to differential equations*, Osaka J. Math. **19** (1982), 311–363.

W. M. Tulczyjew

1. *The Lagrange differential*, Bull. Acad. Polon. Sci. Ser. Sci. Math., Astron., Phys., **24** (1976), 1089–1096.
2. *The Lagrange complex*, Bull. Soc. Math. France **105** (1977), 419–431.
3. *The Euler-Lagrange resolution*, Internat. Coll. on Diff. Geom. Methods in Math. Phys., Aix-en-Provence 1979, in: *Lecture Notes in Math.* **836** (Springer, Berlin, 1980), 22–48.

4. *Geometric foundations of Lagrangian mechanics*, in: *Modern Developments in Analytical Mechanics I: Geometrical Dynamics*, Proc. IUTAM-ISIMM Symp., Torino, Italy 1982, S. Benenti, M. Francaviglia and A. Lichnerowicz, eds. (Accad. Sci. Torino, Torino, 1983), 419–442.

M. M. Vainberg

1. *Variational methods in the theory of nonlinear operators*, GITL, Moscow, 1959 (in Russian).

A. L. Vanderbauwhede

1. *Potential operators and variational principles*, *Hadronic J.* **2** (1979), 620–641.

L. Van Hove

1. *Sur la construction des champs de De Donder-Weyl par la méthode des caractéristiques*, *Acad. Roy. Belg. Bull. Sci.* **31** (1945), 278–285.

V. P. Viflyantsev

1. *Frobenius Theorem for distributions of non-constant rank*, *Uspekhi Mat. Nauk* **197** (1977), 177–178 (in Russian).
2. *On completely integrable distributions of non-constant rank*, *Mat. Zametki* **26** (1979), 921–929 (in Russian).

A. M. Vinogradov

1. *On the algebro-geometric foundations of Lagrangian field theory*, *Soviet Math. Dokl.* **18** (1977), 1200–1204.
2. *A spectral sequence associated with a non-linear differential equation, and algebro-geometric foundations of Lagrangian field theory with constraints*, *Soviet Math. Dokl.* **19** (1978), 144–148.
3. *The $\mathbb{C}$ -spectral sequence, Lagrangian formalism, and conservation laws. I. The linear theory. II. The nonlinear theory*, *J. Math. Anal. Appl.* **100** (1984), 1–40, 41–129.

A. M. Vinogradov and B. A. Kupershmidt

1. *Structure of Hamiltonian mechanics*, *Uspekhi Matemat. Nauk* **32** (1975), 175–236 (in Russian).

R. Vitolo

1. *Some aspects of variational sequences in mechanics*, in: *Proc. Conf. on Differential Geometry and Its Applications*, August 1995, Brno, Czech Republic, J. Janyška and I. Kolář, eds. (Masaryk University, Brno, 1996), 487–494.

A. Vondra

1. *Connections in the Geometry of Non-Autonomous Regular Higher-Order Dynamics*, Thesis, Masaryk University, Brno, 1991, 114 pp.
2. *Semisprays, connections and regular equations in higher order mechanics*, in: *Differential Geometry and Its Applications*, Proc. Conf., Brno, Czechoslovakia, 1989, J. Janyška and D. Krupka eds. (World Scientific, Singapore, 1990), 276–287.
3. *Towards a Geometry of Higher-Order Partial Differential Equations Represented by Connections on Fibered Manifolds*, Thesis, Military Academy, Brno, 1995.

A. Weinstein

1. *Lectures on symplectic manifolds*, CBMS Regional Conference Series in Math. **29** (American Mathematical Society, Providence, 1977), 48 pp.

E. T. Whittaker

1. *A Treatise on Analytical Dynamics of Particles and Rigid Bodies*, The University Press, Cambridge, 1917.