

## D.J. Saunders: publications

### Books

M. Crampin and D.J. Saunders, *Cartan Geometries and their Symmetries: a Lie algebroid approach*, Atlantis Press 2016

*Variations, Geometry and Physics*, ed. O. Krupková and D.J. Saunders, Nova Science Publishers (2008)

*Handbook of Global Analysis*, ed. D. Krupka and D.J. Saunders, Elsevier (2008)

D.J. Saunders, *The geometry of jet bundles*, LMS Lecture Note series **142**, Cambridge University Press 1989

### Articles in books

D.J. Saunders, *Krupka's fundamental Lepage equivalent and the excess function of Wilkins* (In: *Variations, Geometry and Physics*, ed. O. Krupková and D.J. Saunders, Nova Science Publishers (2008), 77–84)

D.J. Saunders, *The Cartan form, 20 years on* (In: *Proc. Conf. Differential Geometry and its Applications, Olomouc, August 2007*, ed. O. Kowalski et al: World Scientific (2008) 527–537)

D.J. Saunders, *Jet manifolds and natural bundles* (In: *Handbook of Global Analysis*, ed. D. Krupka and D.J. Saunders, Elsevier (2008) 1035–1068)

D.J. Saunders, *How to recover a Lagrangian using the homogeneous variational bicomplex* (In: *Differential geometric methods in mechanics and field theory*, ed. F. Cantrijn, M. Crampin and B. Langerock, Universiteit Gent (2007) 141–154)

M. Crampin and D.J. Saunders, *Path geometries and almost Grassmann structures* (In: *Advanced Studies in Pure Mathematics 48, Finsler geometry, Sapporo 2005 – in memory of Makoto Matsumoto*, ed. S.V. Sabau and H. Shimada, Tokyo: Mathematical Society of Japan (2007) 225–261)

M. Crampin and D.J. Saunders, *On the geometry of higher-order ordinary differential equations and the Wuenschmann invariant* (In: *Monografias de la Real Academia de Ciencias de Zaragoza 29*, ed. J. Clemente-Gallardo and E. Martinez, Zaragoza (2006) 79–92)

D.J. Saunders, *Sprays and Cartan projective connections* (In: *Proc. 9th Internat. Conf. on Diff. Geom. Appl., Prague, 2004*, Charles University, Prague (2005) 467–478)

D.J. Saunders, *Sprays and Cartan projective connections* (In: *Global Analysis and Applied Mathematics, AIP Conference Proceedings 729*, American Institute of Physics (2004))

D.J. Saunders, *S – the vertical endomorphism* (In: *Applied Differential Geometry and Mechanics*, ed. W. Sarlet and F. Cantrijn, Universiteit Gent (2003) 141–159)

D.J. Saunders, *The geometry of non-holonomic Lagrangian systems* (In: *Proc. 7th Internat. Conf. on Diff. Geom. Appl., Prague, 1998*, Masaryk University, Brno (1999) 575–579)

## Papers

D.J. Saunders, *Jets and the variational calculus*, *Comm.Math.* **29** (2021) 91–114

D.J. Saunders, *On Lagrangians with reduced-order Euler–Lagrange equations*, *SIGMA* **14** (2018) 089, 13 pages

D.J. Saunders, *Vertical symmetries of Cartan geometries*, *Diff. Geom. Appl.* **54** (2017) 165–174

O. Rossi, D.J. Saunders and G.E. Prince, *Shape maps for second order partial differential equations*, *J. Math. Pures. Appl.* **107** (2017) 615–637

D.J. Saunders, O. Rossi and G.E. Prince, *Tangent bundle geometry induced by second order partial differential equations*, *J. Math. Pures. Appl.* **106** (2016) 296–318

D.J. Saunders, *On null Lagrangians*, *Math. Slovaca* **65** (2015) 1–16

O. Rossi and D.J. Saunders, *Dual jet bundles, Hamiltonian systems and connections*, *Diff. Geom. Appl.* **35** (2014) 178–198

O. Rossi and D.J. Saunders, *Lagrangian and Hamiltonian duality*, *J. Math. Sci.* **218(6)** (2016), DOI 10.1007/s10958-016-3069-6

M. Crampin, T. Mestdag and D.J. Saunders, *Hilbert forms for a Finsler metrizable projective class of sprays*, *Diff. Geom. Appl.* **31(1)** (2013) 63–79

D.J. Saunders, *Projective metrizability in Finsler geometry*, *Comm.Math.* **20(1)** (2012) 63–68

M. Crampin, T. Mestdag and D.J. Saunders, *The multiplier approach to the projective Finsler metrizability problem*, *Diff. Geom. Appl.* **30(6)** (2012) 604–621

M. Crampin and D.J. Saunders, *Homogeneity and projective equivalence of differential equation fields*, *J. Geom. Mech.* **4(1)** (2012) 27–47

D.J. Saunders, *Double structures and jets*, *Diff. Geom. Appl.* **30(1)** (2012) 59–64

M. Crampin and D.J. Saunders, *Holonomy of a class of bundles with fibre metrics*, *Pub. Math. Debrecen* **81(1–2)** (2012) 199–234

D.J. Saunders, *Homogeneous variational problems: a minicourse*, *Comm.Math.* **19** (2011)

91–128

O. Krupková and D.J. Saunders, *Affine duality, and Lagrangian and Hamiltonian systems*, IJGMMP **8(3)**, (2011) 669–697

D.J. Saunders, *Some geometric aspects of the calculus of variations in several independent variables*, Comm. Math. **18(1)** (2010) 3–19

D. Krupka, O. Krupková and D.J. Saunders, *Cartan–Lepage forms in geometric mechanics*, Int. J. Non-Lin. Mech. **47(10)** (2012) 1154–1160

D.J. Saunders, *Thirty years of the inverse problem in the calculus of variations and its applications*, Rep. Math. Phys. **66(1)** (2010) 43–53

D.J. Saunders, *Horizontal forms on jet bundles*, Balkan J. Geom. Appl. **15(1)** (2010) 149–154

D.J. Saunders and M. Crampin, *The fundamental form of a homogeneous Lagrangian in two independent variables*, J. Geom. Phys. **60** (2010) 1681–1697

D. Krupka, O. Krupková and D.J. Saunders, *The Cartan form and its generalizations in the calculus of variations*, I.J.G.M.M.P. **7(4)** (2010) 631–654

M. Crampin and D.J. Saunders, *Homotopy Operators for the Variational Bicomplex, Representations of the Euler–Lagrange Complex, and the Helmholtz–Sonin Conditions*, Lobachevskii J. Math. **30(2)** (2009) 107–123

M. Crampin and D.J. Saunders, *Some concepts of regularity for parametric multiple-integral problems in the calculus of variations*, Czech Math. J. **59(3)** (2009) 741–758

D.J. Saunders, *Homogeneous variational complexes and bicomplexes*, J. Geom. Phys. **59** (2009) 727–739

M. Crampin and D.J. Saunders, *Fefferman-type metrics and the projective geometry of sprays in two dimensions*, Math. Proc. Camb. Phil. Soc. **142** (2007)

M. Crampin and D.J. Saunders, *Affine and projective transformations of Berwald connections*, Diff. Geom. Appl. **25** (2007) 235–250

M. Crampin and D.J. Saunders, *Projective connections*, J. Geom. Phys. **57** (2007) 691–727

M. Crampin and D.J. Saunders, *Cartan’s concept of duality for second-order ordinary differential equations*, J. Geom. Phys. **54** (2005) 146–172

W. Sarlet, D.J. Saunders and F. Cantrijn, *Adjoint symmetries and the generation of first integrals in nonholonomic mechanics*, J. Geom. Phys. **55(2)** (2005) 207–225

M. Crampin and D.J. Saunders, *On null Lagrangians*, Diff. Geom. Appl. **22** (2005) 131–146

- D.J. Saunders, *Prolongations of Lie groupoids and Lie algebroids*, Houston J. Math. **30(3)** (2004) 637–655
- M. Crampin and D.J. Saunders, *The Hilbert-Carathéodory and Poincaré-Cartan forms for higher-order multiple-integral variational problems*, Houston J. Math. **30(3)** (2004) 657–689
- M. Crampin and D.J. Saunders, *The Hilbert-Carathéodory form for parametric multiple integral problems in the calculus of variations*, Acta Appl. Math. **76** (2003) 37–55
- D.J. Saunders, *Homogeneous Lagrangian systems*, Rep. Math. Phys. **51(2–3)** (2003) 315–324
- D.J. Saunders, *On the inverse problem for even-order differential equations in the higher-order calculus of variations*, Diff. Geom. Appl. **16(2)** (2002) 140–166
- D.J. Saunders and M. Crampin, *Variational problems on Lie algebroids*, Diff. Geom. Appl. **15** (2001) 165–174
- D.J. Saunders, F. Cantrijn and W. Sarlet, *Regularity aspects and Hamiltonization of non-holonomic systems*, J. Phys. A: Math. Gen. **32(39)** (1999) 6869
- D.J. Saunders, *Connections in classical mechanics*, Rend. Sem. Mat. Univ. Pol. Torino **53(4)** (1996) 393–404
- W. Sarlet, F. Cantrijn and D.J. Saunders, *A differential geometric setting for mixed first- and second-order ordinary differential equations*, J. Phys. A: Math. Gen. **30(11)** (1997) 4031–4052
- D.J. Saunders, *A new approach to the non-linear connection associated with second-order (and higher-order) differential equation fields*, J. Phys. A: Math. Gen. **30** (1997) 1739–1743
- D.J. Saunders, W. Sarlet and F. Cantrijn, *A geometrical framework for the study of non-holonomic Lagrangian systems: II*, J. Phys. A: Math. Gen. **29(14)** (1996) 4265–4274
- W. Sarlet, F. Cantrijn and D.J. Saunders, *A geometrical framework for the study of non-holonomic Lagrangian systems*, J. Phys. A: Math. Gen. **28(11)** (1995) 3253–3268
- D.J. Saunders, *The regularity of variational problems*, Contemp. Math. **132** (1992) 573–593
- D.J. Saunders, *A note on Legendre transformations*, Diff. Geom. Appl. **1** (1991) 109–122
- D.J. Saunders and M. Crampin, *On the Legendre map in higher-order field theories*, J. Phys. A: Math. Gen. **23(14)** (1990) 3169
- F. Cantrijn, M. Crampin, W. Sarlet and D.J. Saunders, *The canonical isomorphism between  $T^k T^*M$  and  $T^* T^k M$* , C. R. Acad. Sci. Paris, **309(II)** (1989) 1509–1514

D.J. Saunders, *Jet fields, connections and second-order differential equations*, J. Phys. A: Math. Gen. **20(11)** (1987) 3261

D.J. Saunders, *An alternative approach to the Cartan form in Lagrangian field theories*, J. Phys. A: Math. Gen. **20(2)** (1987) 339

D.J. Saunders, *Computer graphics and animations for teaching probability and statistics*, Int. J. Math. Educ. Sci. Technol. **17(5)** (1986) 561–568