List of Publications

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Last updated: November 15, 2009
See also http://www.math.uzh.ch/professur/cattaneo/publications

1. Theses

- A. S. Cattaneo, *Studio delle proprietà di localizzazione su catene quasiperiodiche mediante gruppo di rinormalizzazione nello spazio reale*, "Laurea" Thesis, Milan University, 1991, 116 pages. (Advisor: Prof. L. Girardello): http://www.math.uzh.ch/cattaneo/tesil.pdf

- A. S. Cattaneo, *Teorie topologiche di tipo BF ed invarianti dei nodi*, Ph. D. Thesis, Milan University, 1995, 113 pages. (Advisor: Prof. M. Martellini): http://www.math.uzh.ch/cattaneo/tesi.ps

2. Papers

(1) F. Belgiorno, A. S. Cattaneo, F. Fucito and M. Martellini, "Quantum models of black hole evaporation," in *International Workshop on String Theory, Quantum Gravity and the Unification of Fundamental Interactions* (World Scientific Publishing Co. Pte. Ltd., Singapore, 1993), pp. 19–27.

(2) F. Belgiorno, A. S. Cattaneo, F. Fucito and M. Martellini, "A conformal affine Toda model of 2d black holes: A quantum study of the evaporation end point," Mod. Phys. Lett. **A 8**, 2593–2605 (1993).

(3) F. Belgiorno, A. S. Cattaneo, F. Fucito and M. Martellini, "Conformal affine Toda model of two-dimensional black holes: The end-point state and the S matrix," Phys. Rev. **D 48**, 2660–2669 (1993).

(4) A. S. Cattaneo, A. Gamba and M. Martellini, "Moduli spaces of curves with homology chains and $c = 1$ matrix models," Phys. Lett. **B 327**, 221–225 (1994).

(5) A. S. Cattaneo, A. Gamba and I. V. Kolokolov, "Statistics of the one-electron current in a one-dimensional mesoscopic ring at arbitrary magnetic fields," J. Stat. Phys. **76**, 1065–1074 (1994).

(6) A. S. Cattaneo, A. Gamba, I. V. Kolokolov and M. Martellini, "$1D$-disordered conductor with loops immersed in a magnetic field," Phys. Lett. **A 190**, 206–212 (1994).

(7) F. Belgiorno and A. S. Cattaneo, "Black holes and cosmological constant in bosonic string theory: Some remarks," Int. J. Mod. Phys. **A 10**, 527–539 (1995).

(8) A. S. Cattaneo, P. Cotta-Ramusino and M. Martellini, "Three-dimensional BF theories and the Alexander–Conway invariant of knots," Nucl. Phys. **B 346**, 355–382 (1995).
(9) A. S. Cattaneo, P. Cotta-Ramusino, J. Fröhlich and M. Martellini, "Topological BF theories in 3 and 4 dimensions," J. Math. Phys. **36**, 6137–6160 (1995).
(10) A. S. Cattaneo, P. Cotta-Ramusino, A. Gamba and M. Martellini, "The Donaldson–Witten invariants in pure 4D-QCD with order and disorder 't Hooft-like operators," Phys. Lett. **B 355**, 245–254 (1995).
(11) A. S. Cattaneo, "Cabled Wilson loops in BF theories," J. Math. Phys. **37**, 3684–3703 (1996).
(12) A. S. Cattaneo, "Abelian BF theories and knot invariants," Commun. Math. Phys. **189**, 795–828 (1997).
(13) A. S. Cattaneo, P. Cotta-Ramusino and M. Rinaldi, "BRST symmetries for the tangent gauge group," J. Math. Phys. **39**, 1316–1339 (1998).
(14) R. Bott and A. S. Cattaneo, "Integral invariants of 3-manifolds," J. Diff. Geom. **48**, 91–133 (1998).
(15) A. S. Cattaneo, P. Cotta-Ramusino, F. Fucito, M. Martellini, M. Rinaldi, A. Tanzini and M. Zeni, "Four-dimensional Yang–Mills theory as a deformation of topological BF theory," Commun. Math. Phys. **197**, 571–621 (1998).
(16) A. S. Cattaneo, "Configuration space integrals and invariants for 3-manifolds and knots," Cont. Math. **233**, 153–165 (1999).
(17) A. S. Cattaneo, P. Cotta-Ramusino and M. Rinaldi, "Loop and path spaces and four-dimensional BF theories: Connections, holonomies and observables," Commun. Math. Phys. **204**, 493–524 (1999).
(18) R. Bott and A. S. Cattaneo, "Integral invariants of 3-manifolds. II," J. Diff. Geom. **53**, 1–13 (1999).
(19) A. S. Cattaneo and G. Felder, "A path integral approach to the Kontsevich quantization formula," Commun. Math. Phys. **212**, 591–611 (2000).
(20) A. S. Cattaneo, P. Cotta-Ramusino and C. A. Rossi, "Loop observables for BF theories in any dimension and the cohomology of knots," Lett. Math. Phys. **51**, 301–316 (2000).
(21) A. S. Cattaneo and G. Felder, "Poisson sigma models and deformation quantization," Mod. Phys. Lett. **A 16**, 179–190 (2001).
(22) A. S. Cattaneo and G. Felder, "On the AKSZ formulation of the Poisson sigma model," Lett. Math. Phys. **56**, 163–179 (2001).
(23) A. S. Cattaneo and C. A. Rossi, "Higher-dimensional BF theories in the Batalin–Vilkovisky formalism: the BV action and generalized Wilson loops," Commun. Math. Phys. **221**, 591–657 (2001).
(24) A. S. Cattaneo and G. Felder, "Poisson sigma models and symplectic groupoids," Progress in Mathematics **198**, 61–93 (2001).

(25) A. S. Cattaneo and G. Felder, "On the globalization of Kontsevich's star product and the perturbative Poisson sigma model," Prog. Theor. Phys. Suppl. **144**, 38–53 (2001).
(26) A. S. Cattaneo, G. Felder and L. Tomassini, "Fedosov connections on jet bundles and deformation quantization," in *Deformation Quantization* (ed. G. Halbout), IRMA Lectures in Mathematics and Theoretical Physics (ed. V. Turaev), 191–202 (de Gruyter, Berlin, 2002).
(27) A. S. Cattaneo, P. Cotta-Ramusino and R. Longoni, "Configuration spaces and Vassiliev classes in any dimension," Algebr. Geom. Topol. **2**, 949–1000 (2002).
(28) A. S. Cattaneo, G. Felder and L. Tomassini, "From local to global deformation quantization of Poisson manifolds," Duke Math. J. **115**, 329–352 (2002).
(29) A. S. Cattaneo, J. Fröhlich and B. Pedrini, "Topological field theory interpretation of string topology," Commun. Math. Phys. **240**, 397–421 (2003).
(30) A. S. Cattaneo and P. Xu, "Integration of twisted Poisson structures," J. Geom. Phys. **49**, 187–196 (2004).
(31) A. S. Cattaneo, "On the integration of Poisson manifolds, Lie algebroids, and coisotropic submanifolds," Lett. Math. Phys. **67**, 33–48 (2004).
(32) A. S. Cattaneo and G. Felder, "Coisotropic submanifolds in Poisson geometry and branes in the Poisson sigma model," Lett. Math. Phys. **69**, 157–175 (2004).
(33) A. S. Cattaneo, B. Dherin and G. Felder, "Formal symplectic groupoid," Commun. Math. Phys. **253**, 645–674 (2005).
(34) A. S. Cattaneo and C. A. Rossi, "Wilson surfaces and higher dimensional knot invariants," Commun. Math. Phys. **256**, 513–537 (2005).
(35) A. S. Cattaneo, P. Cotta-Ramusino and R. Longoni, "Algebraic structures on graph cohomology," J. of Knot Theory and Its Ramifications **14**, 627–640 (2005).
(36) A. S. Cattaneo, D. Fiorenza and R. Longoni, "On the Hochschild–Kostant–Rosenberg map for graded manifolds," IMRN **62**, 3899–3918 (2005).
(37) A. S. Cattaneo, D. Fiorenza and R. Longoni, "Graded Poisson algebras," in *Encyclopedia of Mathematical Physics*, (ed. J.-P. Françoise, G. L. Naber and Tsou S. T.), Vol. **2**, 560–567 (Oxford: Elsevier, 2006); Zurich University Preprint Nr. 05-2006.
(38) F. Bonechi, A. S. Cattaneo and M. Zabzine, "Geometric quantization and non-perturbative Poisson sigma model," Adv. Theor. Math. Phys. **10**, 683–712 (2006).
(39) A. S. Cattaneo and G. Felder, "Relative formality theorem and quantisation of coisotropic submanifolds," Adv. Math. **208**, 521–548 (2007).

(40) A. S. Cattaneo and M. Zambon, "Pre-Poisson submanifolds," Travaux mathématiques **17**, 61–74 (2007).
(41) A. S. Cattaneo, "Deformation quantization and reduction," Cont. Math. **450**, 79–101 (2008).
(42) A. S. Cattaneo and F. Schätz, "Equivalences of higher derived brackets," J. Pure and Applied Algebra **212**, 2450–2460 (2008).
(43) A. S. Cattaneo and C. Torossian, "Quantification pour les paires symetriques et diagrammes de Kontsevich," Ann. Sci. Éc. Norm. Sup. **41**, 789–854 (2008).
(44) A. S. Cattaneo and M. Zambon, "Coisotropic embeddings in Poisson manifolds," Trans. Amer. Math. Soc. **361**, 3721–3746 (2009).
(45) A. S. Cattaneo and M. Zambon, "Graded geometry and Poisson reduction," AIP Conf. Proc. **1093**, 48–56 (2009).
(46) A. S. Cattaneo, G. Felder and T. Willwacher, "On L_∞-morphisms of cyclic chains," Lett. Math. Phys. **90**, 85–102 (2009).

3. Nonrefereed proceedings

(47) A. S. Cattaneo, "From topological field theory to deformation quantization and reduction," in *Proceedings of the International Congress of Mathematicians, Madrid, Spain, 2006*, (ed. M. Sanz-Solé, J. Soria, J. L. Varona, J. Verdera), **Vol. III**, 338–365 (European Mathematical Society, 2006); Zurich University Preprint Nr. 06-2006.

4. Lecture notes

(48) A. S. Cattaneo and D. Indelicato, "Formality and Star Products," in *Poisson Geometry, Deformation Quantisation and Group Representations*, (ed. S. Gutt, J. Rawnsley, D. Sternheimer), London Mathematical Society Lecture Note Series **323**, 79–144 (Cambridge University Press, 2005).

5. Books

(49) A. S. Cattaneo, B. Keller, C. Torossian and A. Bruguières, *Déformation, Quantification, Théorie de Lie*, Panoramas et Synthèse **20** (2005), viii+186 pages.

6. Books (as editor)

(50) A. S. Cattaneo, G. Dito, M. Kontsevich and D. Sternheimer (guest editors), *Special Issue on Deformation Quantization*, in SIGMA **4** (2008) and **5** (2009), http://www.emis.de/journals/SIGMA/
(51) A. Alekseev, A. S. Cattaneo, Y. Kosmann-Schwarzbach and T. S. Ratiu (guest editors), *Special Volume on Poisson Geometry*, Lett. Math. Phys. **90**, Nos. 1–3, (2009).

7. Preprints

(52) A. S. Cattaneo, B. Dherin and G. Felder, "Formal Lagrangian operad," 29 pages, math.SG/0505051.
(53) A. S. Cattaneo, B. Dherin and A. Weinstein, "Cotangent microbundle category, I," 33 pages, math-ph/0712.1385
(54) A. S. Cattaneo and G. Felder, "Effective Batalin–Vilkovisky theories, equivariant configuration spaces and cyclic chains," 27 pages, math-ph/0802.1706, to appear in Progress in Mathematics
(55) A. S. Cattaneo and P. Mnëv, "Remarks on Chern–Simons invariants," 30 pages, math.QA/0811.2045, to appear in Commun. Math. Phys.
(56) A. S. Cattaneo, B. Dherin and A. Weinstein, "Symplectic microgeometry, I: Micromorphisms," 18 pages, math.SG/0905.3574, to appear in J. Sympl. Geom.
(57) A. S. Cattaneo, G. Felder and T. Willwacher, "The character map in deformation quantization," 15 pages, math.QA/0906.3122
(58) A. S. Cattaneo, J. Qiu and M. Zabzine, "2D and 3D topological field theories for generalized complex geometry," 28 pages, hep-th/0911.0993
(59) H. Bursztyn, A. S. Cattaneo, R. A. Mehta and M. Zambon, "The Frobenius theorem for graded manifolds and applications in graded symplectic geometry," 14 pages.
(60) A. S. Cattaneo and M. Zambon, "A supergeometric approach to Poisson reduction," 39 pages.

8. Unpublished papers

(61) A. S. Cattaneo, "On the BV formalism," 21 pages, 1996, http://www.math.uzh.ch/reports/07_05.pdf
(62) A. S. Cattaneo, "The Lagrangian operad," 11 pages, 2002, http://www.math.uzh.ch/reports/05_05.pdf