

LIST OF PUBLICATIONS

Alberto S. Cattaneo

Institut für Mathematik, Universität Zürich-Irchel, Winterthurerstr. 190,
CH-8057 Zürich, Switzerland

Last updated: February 9, 2019

See also <https://www.math.uzh.ch/index.php?id=people&key1=116>

Google Scholar ID: <https://scholar.google.ch/citations?user=U7HXC-0AAAAJ&hl=en>

Researcher unique identifier: <https://orcid.org/0000-0001-5775-758X>

1. THESES

- (1) A. S. Cattaneo, *Studio delle proprietà di localizzazione su catene quasi-periodiche 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>
- (2) 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

- (3) 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.
- (4) 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).
- (5) 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).
- (6) 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).
- (7) 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).
- (8) 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).

- (9) 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).
- (10) 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).
- (11) 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).
- (12) 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).
- (13) A. S. Cattaneo, “Cabled Wilson loops in BF theories,” *J. Math. Phys.* **37**, 3684–3703 (1996).
- (14) A. S. Cattaneo, “Abelian BF theories and knot invariants,” *Commun. Math. Phys.* **189**, 795–828 (1997).
- (15) A. S. Cattaneo, P. Cotta-Ramusino and M. Rinaldi, “BRST symmetries for the tangent gauge group,” *J. Math. Phys.* **39**, 1316–1339 (1998).
- (16) R. Bott and A. S. Cattaneo, “Integral invariants of 3-manifolds,” *J. Diff. Geom.* **48**, 91–133 (1998). Reprinted in *Raoul Bott: Collected Papers*, Tu L. (eds), Contemporary Mathematicians, Birkhäuser, 2017, 381–425.
- (17) 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).
- (18) A. S. Cattaneo, “Configuration space integrals and invariants for 3-manifolds and knots,” *Cont. Math.* **233**, 153–165 (1999).
- (19) 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).
- (20) R. Bott and A. S. Cattaneo, “Integral invariants of 3-manifolds. II,” *J. Diff. Geom.* **53**, 1–13 (1999). Reprinted in *Raoul Bott: Collected Papers*, Tu L. (eds), Contemporary Mathematicians, Birkhäuser, 2017, 463–477.
- (21) A. S. Cattaneo and G. Felder, “A path integral approach to the Kontsevich quantization formula,” *Commun. Math. Phys.* **212**, 591–611 (2000).
- (22) 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).
- (23) A. S. Cattaneo and G. Felder, “Poisson sigma models and deformation quantization,” *Mod. Phys. Lett. A* **16**, 179–190 (2001).

- (24) A. S. Cattaneo and G. Felder, “On the AKSZ formulation of the Poisson sigma model,” *Lett. Math. Phys.* **56**, 163–179 (2001).
- (25) 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).
- (26) A. S. Cattaneo and G. Felder, “Poisson sigma models and symplectic groupoids,” *Progress in Mathematics* **198**, 61–93 (2001).
- (27) 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).
- (28) 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).
- (29) A. S. Cattaneo, P. Cotta-Ramusino and R. Longoni, “Configuration spaces and Vassiliev classes in any dimension,” *Algebr. Geom. Topol.* **2**, 949–1000 (2002).
- (30) A. S. Cattaneo, G. Felder and L. Tomassini, “From local to global deformation quantization of Poisson manifolds,” *Duke Math. J.* **115**, 329–352 (2002).
- (31) A. S. Cattaneo, J. Fröhlich and B. Pedrini, “Topological field theory interpretation of string topology,” *Commun. Math. Phys.* **240**, 397–421 (2003).
- (32) A. S. Cattaneo and P. Xu, “Integration of twisted Poisson structures,” *J. Geom. Phys.* **49**, 187–196 (2004).
- (33) A. S. Cattaneo, “On the integration of Poisson manifolds, Lie algebroids, and coisotropic submanifolds,” *Lett. Math. Phys.* **67**, 33–48 (2004).
- (34) 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).
- (35) A. S. Cattaneo, B. Dherin and G. Felder, “Formal symplectic groupoid,” *Commun. Math. Phys.* **253**, 645–674 (2005).
- (36) A. S. Cattaneo and C. A. Rossi, “Wilson surfaces and higher dimensional knot invariants,” *Commun. Math. Phys.* **256**, 513–537 (2005).
- (37) 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).
- (38) A. S. Cattaneo, D. Fiorenza and R. Longoni, “On the Hochschild–Kostant–Rosenberg map for graded manifolds,” *IMRN* **62**, 3899–3918 (2005).
- (39) A. S. Cattaneo, D. Fiorenza and R. Longoni, “Graded Poisson algebras,” in *Encyclopedia of Mathematical Physics*, (ed. J.-P. Francoise, G. L. Naber and Tsou S. T.), Vol. **2**, 560–567 (Oxford: Elsevier, 2006); Zurich University Preprint Nr. 05-2006.

- (40) F. Bonechi, A. S. Cattaneo and M. Zabzine, “Geometric quantization and non-perturbative Poisson sigma model,” *Adv. Theor. Math. Phys.* **10**, 683–712 (2006).
- (41) 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).
- (42) A. S. Cattaneo and G. Felder, “Relative formality theorem and quantisation of coisotropic submanifolds,” *Adv. Math.* **208**, 521–548 (2007).
- (43) A. S. Cattaneo and M. Zambon, “Pre-Poisson submanifolds,” *Travaux mathématiques* **17**, 61–74 (2007).
- (44) A. S. Cattaneo, “Deformation quantization and reduction,” *Cont. Math.* **450**, 79–101 (2008).
- (45) A. S. Cattaneo and F. Schätz, “Equivalences of higher derived brackets,” *J. Pure and Applied Algebra* **212**, 2450–2460 (2008).
- (46) A. S. Cattaneo and C. Torossian, “Quantification pour les paires symétriques et diagrammes de Kontsevich,” *Ann. Sci. Éc. Norm. Sup.* **41**, 789–854 (2008).
- (47) A. S. Cattaneo and M. Zambon, “Coisotropic embeddings in Poisson manifolds,” *Trans. Amer. Math. Soc.* **361**, 3721–3746 (2009).
- (48) A. S. Cattaneo and M. Zambon, “Graded geometry and Poisson reduction,” *AIP Conf. Proc.* **1093**, 48–56 (2009).
- (49) A. S. Cattaneo, G. Felder and T. Willwacher, “On L_∞ -morphisms of cyclic chains,” *Lett. Math. Phys.* **90**, 85–101 (2009).
- (50) A. S. Cattaneo and P. Mněv, “Remarks on Chern–Simons invariants,” *Commun. Math. Phys.* **293**, 803–836 (2010).
- (51) A. S. Cattaneo, B. Dherin and A. Weinstein, “Symplectic microgeometry, I: Micromorphisms,” *J. Sympl. Geom.* **8**, 205–223 (2010).
- (52) A. S. Cattaneo, J. Qiu and M. Zabzine, “2D and 3D topological field theories for generalized complex geometry,” *Adv. Theor. Math. Phys.* **14**, 695–725 (2010).
- (53) A. S. Cattaneo, B. Dherin and G. Felder, “Formal Lagrangian operad,” *International Journal of Mathematics and Mathematical Sciences*, vol. 2010, Article ID 643605, 36 pages, 2010. doi:10.1155/2010/643605.
- (54) A. S. Cattaneo and G. Felder, “Effective Batalin–Vilkovisky theories, equivariant configuration spaces and cyclic chains,” *Progress in Mathematics* **287**, 111–137 (2011).
- (55) A. S. Cattaneo and F. Schätz, “Introduction to supergeometry,” *Rev. Math. Phys.* **23**, 669–690 (2011).
- (56) A. S. Cattaneo, B. Dherin and A. Weinstein, “Symplectic microgeometry II: generating functions,” *Bull. Brazilian Math. Soc.* **42**, 507–536 (2011).

- (57) A. S. Cattaneo, G. Felder and T. Willwacher, “The character map in deformation quantization,” *Adv. Math.* **228**, 1966–1989 (2011).
- (58) A. S. Cattaneo, P. Mnëv and N. Reshetikhin, “Classical and quantum Lagrangian field theories with boundary,” 25 pages, in Proceedings of the “Corfu Summer Institute 2011 School and Workshops on Elementary Particle Physics and Gravity,” PoS(CORFU2011)044.
- (59) F. Bonechi, A. S. Cattaneo and P. Mnëv, “The Poisson sigma model on closed surfaces,” *JHEP* **2012**, 99, pages 1–27 (2012).
- (60) A. S. Cattaneo, I. Contreras and C. Heunen, “Relative Frobenius algebras are groupoids,” *J. Pure and Applied Algebra* **217**, 114–124 (2013).
- (61) A. S. Cattaneo and M. Zambon, “A supergeometric approach to Poisson reduction,” *Commun. Math. Phys.* **318**, 675–716 (2013).
- (62) A. S. Cattaneo, B. Dherin and A. Weinstein, “Symplectic Microgeometry III: Monoids,” *J. Sympl. Geom.* **11**, 319–341 (2013).
- (63) A. S. Cattaneo, C. A. Rossi and C. Torossian, “Biquantization of symmetric pairs and the quantum shift,” *J. Geom. Phys.* **74**, 211–250 (2013).
- (64) A. S. Cattaneo, B. Dherin and A. Weinstein, “Integration of Lie algebroid comorphisms,” *Portugaliae Mathematica* **70**, 113–144 (2013).
- (65) A. S. Cattaneo and I. Contreras, “Groupoids and Poisson sigma models with boundary,” *Geometric, Algebraic and Topological Methods for Quantum Field Theory*, January 2014, 315–330 (2014).
- (66) A. S. Cattaneo, “Coisotropic submanifolds and dual pairs,” *Lett. Math. Phys.* **104**, 243–270 (2014).
- (67) A. S. Cattaneo, P. Mnëv and N. Reshetikhin, “Classical BV theories on manifolds with boundaries,” *Commun. Math. Phys.* **332**, 535–603 (2014).
- (68) A. S. Cattaneo and P. Mnëv, “Wave relations,” *Commun. Math. Phys.* **332**, 1083–1111 (2014).
- (69) A. S. Cattaneo, P. Mnëv and N. Reshetikhin, “Semiclassical quantization of classical field theories,” *Mathematical Aspects of Quantum Field Theories*, Mathematical Physics Studies (Springer), 275–324 (2015).
- (70) A. S. Cattaneo and I. Contreras, “Relational symplectic groupoids,” *Lett. Math. Phys.* **105**, 723–767 (2015).
- (71) A. S. Cattaneo and M. Schiavina, “BV-BFV approach to general relativity: Einstein–Hilbert action,” *J. Math. Phys.* **57**, 023515 (2016), 17 pages.
- (72) F. Bonechi, A. S. Cattaneo and R. Iraso, “Comparing Poisson sigma model with A-model,” *JHEP* **10** (2016) 133, 11 pages.
- (73) A. S. Cattaneo and M. Schiavina, “On time,” *Lett. Math. Phys.* **107**, 375–408 (2017).

- (74) A. S. Cattaneo and A. Perez, “A note on the Poisson bracket of 2d smeared fluxes in loop quantum gravity,” *Class. Quant. Grav.* **34**, 107001 (2017), 5 pages.
- (75) A. S. Cattaneo, N. Moshayedi and K. Wernli, “Relational symplectic groupoid quantization for constant Poisson structures,” *Lett. Math. Phys.* **107**, 1649–1688 (2017).
- (76) A. S. Cattaneo, P. Mnëv and K. Wernli, “Split Chern–Simons theory in the BV-BFV formalism,” in *Quantization, Geometry and Non-commutative Structures in Mathematics and Physics*, A. Cardona, H. Ocampo, P. Morales, S. Paycha, A.F. Reyes Lega (Eds.), Springer 2017, 293–324.
- (77) A. S. Cattaneo, “Integral Invariants of 3-Manifolds (Commentary on [111], [114]),” in *Raoul Bott: Collected Papers*, Tu L. (eds), Contemporary Mathematicians, Birkhäuser, 2017, 101-102.
- (78) A. S. Cattaneo, P. Mnëv and N. Reshetikhin, “Perturbative quantum gauge theories on manifolds with boundary,” *Commun. Math. Phys.* **357**, 631–730 (2018); see also: hedgehog BV
- (79) A. S. Cattaneo, M. Schiavina and I. Seliash, “BV-equivalence between triadic gravity and BF theory in three dimensions,” *Lett. Math. Phys.* **108**, 1873–1884 (2018).
- (80) A. S. Cattaneo, P. Mnëv and N. Reshetikhin, “Poisson sigma model and semiclassical quantization of integrable systems,” *Reviews in Mathematical Physics* **30**, 93–118 (2018).
- (81) A. S. Cattaneo and M. Schiavina, “The reduced phase space of Palatini–Cartan–Holst theory,” *Ann. Henri Poincaré* **20**, 445–480 (2019).

3. LECTURE NOTES

- (82) 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).

4. BOOKS

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

5. BOOKS (AS EDITOR)

- (84) 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/>

- (85) 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).
- (86) A. S. Cattaneo, A. Giaquinto and P. Xu (editors), *Higher Structures in Geometry and Physics: In Honor of Murray Gerstenhaber and Jim Stasheff*, Progress in Mathematics **287**, XV, 362 p. 92 illus., (2011, Birkhäuser, Boston).

6. PREPRINTS

- (87) A. S. Cattaneo, P. Mnëv and N. Reshetikhin, “Perturbative BV theories with Segal-like gluing,” 8 pages, arXiv:1602.00741
- (88) A. S. Cattaneo, P. Mnëv and N. Reshetikhin, “A cellular topological field theory,” 85 pages, several figures, arXiv:1701.05874
- (89) A. S. Cattaneo and M. Schiavina, “BV-BFV approach to General Relativity: Palatini–Cartan–Holst action,” 21 pages, arXiv:1707.06328
- (90) F. Bonechi, A. S. Cattaneo, R. Iraso and M. Zabzine, “Observables in the equivariant A-model,” 16 pages, arXiv:1807.08659
- (91) A. S. Cattaneo, N. Moshayedi and K. Wernli, “Perturbative quantization of nonlinear AKSZ sigma models on manifolds with boundary,” 27 pages, 6 figures, arXiv:1807.11782
- (92) A. S. Cattaneo, N. Moshayedi and K. Wernli, “On the globalization of the Poisson sigma model in the BV-BFV formalism,” 29 pages, 15 figures, arXiv:1808.01832
- (93) A. S. Cattaneo, P. Mnëv and K. Wernli, “Theta invariants of lens spaces via the BV-BFV formalism,” 25 pages, 16 figures, arXiv:1810.06663
- (94) A. S. Cattaneo and I. Contreras, “Split canonical relations,” 33 pages, 2 figures, arXiv:1811.10107

7. UNPUBLISHED PAPERS

- (95) A. S. Cattaneo, “The Lagrangian operad,” 11 pages, 2002, http://www.math.uzh.ch/reports/05_05.pdf
- (96) A. S. Cattaneo, B. Dherin and A. Weinstein, “Cotangent microbundle category, I,” 33 pages, math-ph/0712.1385
- (97) 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, 2009, http://www.math.uzh.ch/fileadmin/math/preprints/12_09.pdf

8. INTERNAL LECTURE NOTES

- (98) A. S. Cattaneo, *On the BV formalism*, 21 pages, 1996.
- (99) A. S. Cattaneo, *Notes on the self-linking number*, 12 pages, 1999.
- (100) A. S. Cattaneo, *Skript für MATLAB*, 63 pages.

- (101) A. S. Cattaneo, *Lineare Algebra für Analysis*, 14 pages.
- (102) A. S. Cattaneo, *Der Transformationssatz*, 19 pages.
- (103) A. S. Cattaneo, *2×2* , 45 pages.
- (104) A. S. Cattaneo and N. Moshayedi, *Classical Mechanics*, 79 pages.
- (105) A. S. Cattaneo, *Notes on Manifolds*, 180 pages.