
Gregory Galloway - Publications

- *Existence of CMC Cauchy surfaces from a spacetime curvature condition* (with Eric Ling), [arXiv:arXiv:1804.05949](#).
- *Rigidity of asymptotically AdS₂ x S² spacetimes* (with Melanie Graf), [arXiv:1803.10529](#).
- *Weakly trapped surfaces in asymptotically de Sitter spacetimes* (with Piotr Chrusciel, and Eric Ling), to appear in Class. Quant. Grav., [arXiv:1803.02339](#).
- *On the mass aspect function and positive energy theorems for asymptotically hyperbolic manifolds* (with Piotr Chrusciel, Luc Nguyen, and Tim-Torben Paetz), to appear in Class. Quant. Grav., [arXiv:1801.03442](#).
- *Rigidity in vacuum under conformal symmetry* (with Carlos Vega), Letters in Mathematical Physics (2018).
- *On the geometry and topology of initial data sets with horizons* (with L. Andersson, M. Dahl and D. Pollack), to appear in Asian J. Math. [arXiv:1508.01896](#).
- *Rigidity of outermost MOTS - the initial data version*, Gen. Rel. Grav. J. (2018).
- *A note on the rigidity of marginally outer trapped 2-spheres* (with Abraao Mendes), Commun. Anal. Geom **18** (2018) 63-83.
- *Topology and singularities in cosmological spacetimes obeying the null energy condition* (with E. Ling), Commun. Math. Phys. (2017).
- *Timelike completeness as an obstruction to \mathcal{C}^0 -extensions* (with E. Ling and J. Sbierski), Commun. Math. Phys. **359** (2017) 937-949.

- *Some Remarks on the C^0 -(in)extendibility of Spacetimes* (with E. Ling), Ann. Henri Poincare **18** (2017) 3427-3447.
- *Hausdorff closed limits and rigidity in Lorentzian geometry* (with C. Vega), Ann. Henri Poincare, **18** (2017) 3399-3426.
- *Uniqueness of photon spheres via positive mass rigidity* (with C. Cederbaum), Commun. Anal. Geom., **25** (2017) 303-320.
- *Variational and rigidity properties of static potentials* (with P. Miao), Commun. Anal. and Geom. **25** (2017) 163-183.
- *Uniqueness of photon spheres in electro-vacuum spacetimes* (with C. Cederbaum), Class. Quantum Grav. **33** (2016) 075006.
- *On static Poincare-Einstein metrics* (with E. Woolgar), Journal of High Energy Physics, **JHEP06** (2015) 051.
- *On the topology of initial data sets with higher genus ends* (with K. Baker), Commun. Math. Phys., **336** (2015) 431-440.
- *Cosmological singularities in Bakry-Emery spacetimes* (with E. Woolgar), J. Geom. Phys., **86** (2014) 359-369.
- *Outer trapped surfaces are dense near MOTSs* (with P. Chrusciel), Class. Quantum Grav., **31** (2014) 045013.
- *Achronal limits, Lorentzian spheres, and splitting* (with C. Vega), Ann. Henri Poincare, **15** (2014) 2241-2279.
- *Topological censorship from the initial data point of view* (with M. Eichmair and D. Pollack), J. Diff. Geom., **95** (2013) 389-405.
- *Constraints on the topology of higher dimensional black holes*, in: Black holes in higher dimensions, 159-179, Cambridge Univ. Press, 2012.

- *Nonexistence of marginally trapped surfaces and geons in 2+1 gravity* (with K. Schleich and D. M. Witt), Commun. Math. Phys., **310** (2012) 285-298.
- *Stability and rigidity of extremal surfaces in Riemannian geometry and General Relativity*, in: Surveys in geometric analysis and relativity, 221-239, Adv. Lect. Math., 20, Int. Press, 2011 (volume celebrating Richard Schoen's 60th birthday).
- *Singularity theorems from weakened energy conditions* (with C. Fewster), Class. Quantum Grav., **28** (2011) 125009.
- *Mathematical General Relativity: a sampler* (with P. Chrusciel and D. Pollack), Bull. Amer. Math. Soc., **47** (2010) 567-638.
- *Singularity theorems based on trapped submanifolds of arbitrary co-dimension* (with J. M. M. Senovilla), Class. Quantum Grav. (Fast Track Communication), **27** (2010) 152002.
- *Uniqueness of static black-holes without analyticity* (with P. Chrusciel), Class. Quantum Grav. (Fast Track Communication), **27** (2010) 152001.
- *Topological censorship for Kaluza-Klein space-times* (with P. Chrusciel and D. Solis), Ann. Henri Poincare, **10** (2009) 893-912.
- *Some remarks on the size of bodies and black holes* (with N. O'Murchadha), Class. Quant. Grav., **25** (2008) 105009.
- *Rigidity of marginally trapped surfaces and the topology of black holes*, Commun. Anal. Geom., **16** (2008) 217-229.
- *Rigidity and positivity of mass for asymptotically hyperbolic manifolds* (with L. Andersson and M. Cai), Ann. Henri Poincare, **9** (2008) 1-33.
- *Uniqueness of de Sitter space* (with D. Solis), Classical Quantum Grav., **24** (2007) 3125--3138.

- *A generalization of Hawking's black hole topology theorem to higher dimensions* (with R. Schoen), Commun. Math. Phys., **266** (2006) 571-576.
- *Some uniqueness results for dynamical horizon* (with A. Ashtekar), Adv. Theor. Math. Phys., **9** (2005) 1-30.
- *A poor man's positive energy theorem* (with P. Chrusciel), Class. Quant. Grav., **21** (2004) L59.
- *Cosmological spacetimes with $\Lambda > 0$* , in: Advances in Differential Geometry and General Relativity, eds. S. Dostoglou and P. Ehrlich, Contemp. Math., vol. 359, Amer. Math. Soc., 2004.
- *Null geometry and the Einstein equations*, in: The Einstein Equations and the Large Scale Behavior of Gravitational Fields, eds. P. T. Chrusciel and H. Friedrich, Birkhauser, 2004.
- *Non-Existence of Black Holes in Certain $\Lambda < 0$ Spacetimes* (with S. Surya and E. Woolgar), Classical Quantum Grav. **20** (2003) 565-573.
- *On the geometry and mass of static, asymptotically AdS spacetimes and the uniqueness of the AdS soliton* (with S. Surya and E. Woolgar), Commun. Math. Phys. **241** (2003) 1-25.
- *dS/CFT and spacetime topology* (with L. Andersson), Adv. Theor. Math. Phys., **6** (2003) 307-327.
- *Some global results for asymptotically simple spacetimes*, in: The conformal structure of space-times; geometry, analysis, numerics, (eds, J. Frauendiener and H. Friedrich), Lecture Notes in Physics, vol. 604 (2002), Springer Verlag.
- *A uniqueness theorem for the adS soliton* (with S. Surya and E. Woolgar), Phys. Rev. Lett., **88** (2002) 101102.
- *On the topology and area of higher dimensional black holes* (with M. Cai), Classical Quantum Gravity **18** (2001), 2707--2718.

- *On fine differentiability properties of horizons and applications to Riemannian geometry* (with P. Chrusciel, J.H.G. Fu, and R. Howard), J.Geom.Phys. **41** (2002) 1-12.
- *The AdS/CFT correspondence and topological censorship* (with K. Schleich, D. Witt, and E. Woolgar), Phys. Lett. B **505** (2001) 255-262.
- *Regularity of horizons and the area theorem* (with P. Chrusciel, E. Delay, and R. Howard), Ann. Henri Poincare, **2** (2001) 109-178.
- *Boundaries of zero scalar curvature in the AdS/CFT correspondence* (with M. Cai), Adv. Theor. Math. Phys., **3** (1999) 1769-1783.
- *Maximum principles for null hypersurfaces and null splitting theorems*, Ann. Henri Poincare **1** (2000) 543-567.
- *Rigidity of area minimizing tori in 3-manifolds of nonnegative scalar curvature*(with M. Cai), Commun. Geom. and Anal., **8** (2000) 565-573 .
- *Topological censorship and higher genus black holes* (with K. Schleich, D. Witt, and E. Woolgar), Phys. Rev. D, **60** (1999) 104039, gr-qc/9902061.
- *The cosmological time function* (with L. Andersson and R. Howard), Class. Quantum Grav., **15** (1998) 309-322, gr-qc/9709084.
- *A strong maximum principle for weak solutions of quasi-linear elliptic equations with applications to Lorentzian and Riemannian geometry*(with L. Andersson and R. Howard), Commun. in Pure and Applied Math., **L1** (1998) 581-624, dg-ga/9707015.
- *Horizons non-differentiable on a dense set* (with P. Chrusciel), Commun. Math. Phys., **193** (1998) 449-470, gr-qc/9611032.
- *Some rigidity results for spatially closed spacetimes*, Mathematics of Gravitation, Part I: Lorentzian Geometry and Einsteins Equations, Banach Center Publications, vol. 41, Institute of Mathematics, Polish Academy of Sciences, Warsaw, 1997.

- *The cosmic censor forbids naked topology*(with E. Woolgar), Class. Quantum Grav. **14** (1997) L1-L7, gr-qc/9609007.
- *Least area tori and 3-manifolds of nonnegative scalar curvature* (with M. Cai), Math. Zeit. **223** (1996) 387-395.
- *A "finite infinity" version of topological censorship*, Class. Quantum Grav. **13** (1996) 1471-1478.
- *Regularity of Lorentzian Busemann functions* (with A. Horta), Trans. Amer. Math. Soc. **348** (1996) 2063-2084.
- *On the topology of the domain of outer communication*, Class. Quantum Grav. **12** (1995) L99-L101.
- *Topological censorship and the topology of black holes* (with S. Browdy), J. Math.Phys. **36** (1995) 4952-4961.
- *Least area tori, black holes and topological censorship*, Contemp. Math. **170** (1994) 113-123 (eds. J. K. Beem and K. Duggal).
- *Local splitting theorems for Riemannian manifolds* (with M. Cai and Z. Liu), Proc. Amer. Math. Soc. **120** (1994) 1231-1239.
- *The Lorentzian version of the Cheeger-Gromoll splitting theorem and its application to general relativity*, Proc. Symp. Pure Math. **54** (1993) 249-257.
- *On the topology of black holes*, Commun. Math. Phys. **151** (1993) 53-66.