

## LIST OF PUBLICATIONS

TUOMAS ORPONEN

6.11.2018

### A. PEER-REVIEWED SCIENTIFIC ARTICLES

- (1) *Slicing Sets and Measures, and the Dimension of Exceptional Parameters*, **J. Geom. Anal.** **24** (1) (2014), 47–80
- (2) *Radial projections of rectifiable sets*, with T. Sahlsten, **Ann. Acad. Sci. Fenn. Math** **36** (2011), 677–681
- (3) *Weak and Strong Type Estimates for Maximal Truncations of Calderón-Zygmund Operators on  $A_p$  Weighted Spaces*, with T. Hytönen, M. Lacey, H. Martikainen, M. Reguera, E. Sawyer and I. Uriarte-Tuero, **J. Anal. Math.** **118** (1) (2012), 177–220
- (4) *Tangent measures of non-doubling measures*, with T. Sahlsten, **Math. Proc. Cambridge Philos. Soc.** **152** (2012), 555–569
- (5) *On the Distance Sets of Self-Similar Sets*, **Nonlinearity** **25** (2012), p. 1919–1929
- (6) *On the Haar Shift Representations of Calderón-Zygmund Operators*, **Proc. Amer. Math. Soc.** **141** (2013), 2693–2698
- (7) *On the packing measure of self-similar sets*, **Nonlinearity** **26** (2013), p. 2929–2934
- (8) *Constancy results for special families of projections*, with K. Fässler, **Math. Proc. Cambridge Philos. Soc.** **154**, Issue 3 (2013), 549–568
- (9) *Non-existence of multi-line Besicovitch sets*, **Publ. Mat.** **58**, No. 1 (2014), 213–220
- (10) *On restricted families of projections in  $\mathbb{R}^3$* , with K. Fässler, **Proc. London Math. Soc.** **109** (2) (2014), 353–381
- (11) *Square functions with general measures II*, with H. Martikainen and M. Mourgoglou, **Indiana Univ. Math. J.** **63**, No. 5 (2014), 1249–1279
- (12) *On Fourier analytic properties of graphs*, with J. Fraser and T. Sahlsten, **Int. Math. Res. Notices** **2014**, No. 10 (2014), 2730–2745
- (13) *On the Packing Dimension and Category of Exceptional Sets of Orthogonal Projections*, **Ann. Mat. Pura Appl.** **194** (3) (2015), 843–880
- (14) *On the packing measure of the slices of self-similar sets*, **J. Fractal Geom.** **2** (4) (2015), 389–401
- (15) *Hausdorff dimension estimates for restricted families of projections in  $\mathbb{R}^3$* , **Adv. Math.** **275** (2015), 147–183
- (16) *On the tube-occupancy of sets in  $\mathbb{R}^d$* , **Int. Math. Res. Notices** **2015** (2015), 9815–9831
- (17) *On Ahlfors-David regular weighted bound for the extension operator associated to the circle*, **Bull. London Math. Soc.** **47** (4) (2015), p. 575–584
- (18) *Characterising the big pieces of Lipschitz graphs property using projections*, with H. Martikainen, **J. Eur. Math. Soc.** **20** (2018), 1055–1073
- (19) *Some obstacles in characterising the boundedness of bi-parameter singular integrals*, with H. Martikainen, **Math. Z.** **282** (1) (2016), p. 535–545
- (20) *Hausdorff dimension, intersection of projections and exceptional plane sections*, with P. Mattila, **Proc. Amer. Math. Soc.** **144** (8) (2016), 3419–3430
- (21) *Projections of planar sets in well-separated directions*, **Adv. Math.** **297** (2016), 1–15
- (22) *Quasisymmetric maps on Kakeya sets*, **Int. Math. Res. Notices** **2017** (2016), 3413–3425
- (23) *The Assouad dimensions of projections of planar sets*, with J. Fraser, **Proc. London Math. Soc.** **114** (2) (2017), 374–398
- (24) *On the distance sets of Ahlfors-David regular sets*, **Adv. Math.** **307** (5) (2017), 1029–1045
- (25) *Boundedness of the density normalised Jones’ square function does not imply 1-rectifiability*, with H. Martikainen, **J. Math. Pures Appl.** **110** (2018), 71–92

- (26) *Curve packing and modulus estimates*, with K. Fässler, **Trans. Amer. Math. Soc.** **370** (2018), 4909-4926
- (27) *An improved bound on the packing dimension of Furstenberg sets in the plane*, **J. Eur. Math. Soc.** **22** (3) (2020), 797-831
- (28) *A sharp exceptional set estimate for visibility*, **Bull. London Math. Soc.** **50** (2018), 1-6
- (29) *On the conformal dimension of product measures*, with D. Bate, **Proc. London Math. Soc.** **117** (2) (2018), 277-302
- (30) *Intrinsic Lipschitz graphs and vertical  $\beta$ -numbers in the Heisenberg group*, with V. Chousionis and K. Fässler, **Amer. J. Math.** **141**(4) (2019), 1087-1147
- (31) *Absolute continuity and  $\alpha$ -numbers on the real line*, **Anal. PDE** **12** (4) (2019), 969-996
- (32) *Improved bounds for restricted families of projections to planes in  $\mathbb{R}^3$* , with L. Venieri, appeared online in **Int. Math. Res. Notices** (2018)
- (33) *On the dimension and smoothness of radial projections*, **Anal. PDE** **12** (5) (2019), 1273-1294
- (34) *Metric currents and the Poincaré inequality*, with K. Fässler, **Calc. Var. PDE** **2**(2) (2019)
- (35) *An integralgeometric approach to Dorrnsoro estimates*, appeared online in **Int. Math. Res. Notices** (2019)
- (36) *Boundedness of singular integrals on  $C^{1,\alpha}$  intrinsic graphs in the Heisenberg group*, with V. Chousionis and K. Fässler, **Adv. Math.** **354** (1) (2019), 106745
- (37) *On the Assouad dimension of projections*, to appear in **Proc. London Math. Soc.**, arXiv:1902.04993
- (38) *Quantitative absolute continuity of planar measures with two independent Alberti representations*, with D. Bate, **Calc. Var. PDE** **59** (2020) (online first)
- (39) *Vertical versus horizontal Sobolev spaces*, with K. Fässler, appeared electronically in **J. Funct. Anal.** (2020)
- (40) *Semmes surfaces and intrinsic Lipschitz graphs in the Heisenberg group*, with K. Fässler and S. Rigot, **Trans. Amer. Math. Soc.** (to appear), arXiv:1803.04819
- (41) *Dorrnsoro's theorem in Heisenberg groups*, with K. Fässler, **Bull. London Math. Soc.** (to appear), arXiv:1901.04767
- (42) *Combinatorial proofs of two theorems of Lutz and Stull*, **Math. Prof. Cambridge Philos. Soc.** (to appear), arXiv:2002.01743

### C. SUBMITTED PREPRINTS

- (1) *A Marstrand-type restricted projection theorem in  $\mathbb{R}^3$* , with A. Käenmäki and L. Venieri, preprint (2017), arXiv:1708.04859
- (2) *Riesz transform and vertical oscillation in the Heisenberg group*, with K. Fässler, preprint (2018), arXiv:1810.13122
- (3) *Absolute continuity in families of parametrised non-homogeneous self-similar measures*, joint with A. Käenmäki, preprint (2018), arXiv:1812.05006
- (4) *Cheeger's differentiation theorem via the multilinearakeya inequality*, with D. Bate and I. Kangasniemi, preprint (2019), arXiv:1904.00808
- (5) *Metric rectifiability of  $\mathbb{H}$ -regular surfaces with Hölder continuous horizontal normal*, with K. Fässler and D. Di Donato, preprint (2020), arXiv:1906.10215
- (6) *Quantitative Alberti representations in spaces of bounded geometry*, preprint (2019), arXiv:1907.06903
- (7) *Singular integrals on regular curves in the Heisenberg group*, with K. Fässler, preprint (2019), arXiv:1911.03223
- (8) *On the dimension of visible parts*, preprint (2019), arXiv:1912.10898
- (9) *Planar incidences and geometric inequalities in the Heisenberg group*, with K. Fässler and A. Pinamonti, preprint (2020), arXiv:2003.05862
- (10) *Sub-elliptic boundary value problems in flag domains*, with M. Villa, preprint (2020), arXiv:2006.08293
- (11) *Plenty of big projections imply big pieces of Lipschitz graphs*, preprint (2020), arXiv:2008.08843

## D. NOTES (NON-SUBMITTED PREPRINTS)

These papers were typically submitted once and rejected, and I/we haven't gotten around revising them. As far as I know, there is nothing formally wrong with the results or proofs.

- (1) *A Characterization of the boundedness of the median maximal function on weighted  $L^p$  spaces*, with H. Martikainen, arXiv:1105.5987
- (2) *Every locally finite Borel measure on  $\mathbb{R}$  has conformal dimension zero*, arXiv:1705.04961
- (3) *A note on expansion in prime fields*, with L. Venieri, arXiv:1801.09591
- (4) *The local symmetry condition in the Heisenberg group*, arXiv:1807.05010

## E. PUBLICATIONS INTENDED FOR PROFESSIONAL COMMUNITIES

- (1) *Puiden varjoja ja projektioita*, (English translation: *Shadows of trees and projections*), **Arkhimedes**<sup>1</sup> **4** (2013), pp. 19–24

## F. THESES

- (1) *Avaruus  $L(1 + \log^+ L)$  ja maksimaalifunktion integroituvuus*, (English translation: *The space  $L(1 + \log^+ L)$  and the integrability of the maximal function*), Bachelor's thesis, University of Helsinki (2008)
- (2) *Hausdorff-dimension säilyminen projektioissa*, (English translation: *The conservation of Hausdorff dimension under projections*), Master's thesis, University of Helsinki (2009)
- (3) *Exceptional sets in projection and slicing theorems*, Doctoral dissertation (article), University of Helsinki (2012)

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<sup>1</sup>Finnish journal of physics and mathematics, published since 1948 by the Finnish Physical Society, the Finnish Mathematical Society and the Physical Society in Finland.