Distortion of dimension by metric space-valued Sobolev mappings
Lecture III

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Outline

Lecture I. Sobolev and quasiconformal mappings in Euclidean space

Lecture II. Sobolev mappings between metric spaces

Lecture III. Dimension distortion theorems for Sobolev and quasiconformal mappings defined from the sub-Riemannian Heisenberg group

The ACL property for QC maps on the Heisenberg group

"... the crucial ACL regularity condition for quasiconformal mappings cannot be proved as easily as in the Euclidean case. Mostow had overlooked this difficulty in his original proof of the ACL regularity. But once we brought this point to his attention, he worked out a complete proof ..."

A. Korányi and H.-M. Reimann, 'Foundations for the theory of QC mappings on the Heisenberg group', *Adv. Math.*, 1995

Mostow ('69,'73) — Kor–Rei ('85) — Pansu ('89) — $\begin{matrix}\text{Kor–Rei/}\\ \text{Hei–Kos/Mostow}\end{matrix}$ ('94–'95)

References

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Z. M. Balogh, R. Monti and J. T. Tyson, 'Frequency of Sobolev and QC dimension distortion', *J. Pures Math. Appl.*, 2013.

Z. M. Balogh, J. T. Tyson and K. Wildrick, 'Dimension distortion by Sobolev mappings in foliated metric spaces', *Anal. Geom. Metr. Spaces*, 2013.

Z. M. Balogh, P. Mattila and J. T. Tyson, 'Grassmannian frequency of Sobolev dimension distortion', *Comput. Methods Funct. Theory*, 2014.

Z. M. Balogh, J. T. Tyson and K. Wildrick, 'Frequency of Sobolev dimension distortion of horizontal subgroups of Heisenberg groups', to appear in *Ann. Scuola Norm. Super. Pisa*.

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Slides available at

http://www.math.illinois.edu/∼tyson/conferences.html/