

REGULARITY OF HARMONIC MAPS BETWEEN ALEXANDROV SPACES

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M. Gromov and R. Schoen in 1992 initiated to study the theory of harmonic maps into singular spaces, motivated by the p-adic superrigidity for lattices in group of rank one. The regularity of harmonic maps is an important topic in geometric analysis. In 1997, J. Jost and F. H. Lin, independently proved that every energy minimizing harmonic map from an Alexandrov space with curvature bounded from below to an Alexandrov space with non-positive curvature is locally Hlder continuous. Meanwhile, F. H. Lin proposed an open question: can the Hlder continuity be improved to Lipschitz continuity? J. Jost also asked a similar problem about Lipschitz regularity of harmonic maps between metric spaces . This consists of two lectures on geometric analysis on Alexandrov spaces. In the first lecture, I will give an invitation to Alexandrov geometry. In the second lecture, I will present an affirmative answer to the problem about Lipschitz regularity of harmonic maps between Alexandrov spaces. (This is a joint work with Hui-Chun Zhang.)

Duration: 2 hours.