

SEMICONCAVE FUNCTIONS IN ALEXANDROV GEOMETRY

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ABSTRACT. I will talk about semiconcave functions on Alexandrov spaces with curvature bounded below. Semiconcave functions and their gradient flows provide an important technical tool for studying Alexandrov spaces with curvature bounded below. I will discuss basic properties and constructions of semi-concave functions and will talk about applications such as Morse theory on Alexandrov spaces which shows that a finite dimensional Alexandrov spaces are stratified manifolds. I will also discuss other applications such as various nilpotency theorems as well as some open problems.