

International Workshop on Nonlocal Models, PDEs and Applications

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Title: **The total variation flow in metric random walk spaces**

Our aim is to study the total variation flow in metric random walk spaces, which include locally finite weighted connected graphs. We first introduce the concepts of total variation, perimeter and mean curvature in the ambient of metric random walk spaces. We establish some inequalities of Poincaré type. Then we study existence and uniqueness of solution of the total variation flow, and its asymptotic behaviour.

Joint work with J. M. Mazón and M. Solera