



## Karlstad Applied Analysis Seminar (2023)

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29 November 2023

### **A gradient flow structure for nonlocal transport equations with nonlinear mobility**

#### **Abstract**

Nonlocal transport equations with nonlinear mobility (NTNs) are a class of conservation laws that commonly arise as large population limits of complex phenomena manifested in models for biological processes with overcrowding prevention such as bacterial chemotaxis, the collective behavior of animal groups, and vehicular and pedestrian movements. Despite the abundance of gradient-flow techniques available for nonlocal transport equations, many of these tools are not directly applicable to NTNs. In this talk, I will highlight the main ideas and strategy involved in giving 1-d NTNs a rigorous gradient flow structure via the evolutionary Gamma-convergence of a family of discrete particle approximations.