

Convergence for a Newton algorithm under regularity conditions for optimal transport

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We consider a damped Newton algorithm to calculate the transport map of semi-discrete optimal transport problems, where the initial measure is absolutely continuous while the target measure is discrete. For costs satisfying standard conditions arising in the regularity theory of optimal transport, we show this algorithm enjoys global linear convergence; this is done by exploiting Loeper’s geometric interpretation of the so-called MTW conditions.

This is joint work with Quentin Mérigot and Boris Thibert.

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