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MADALGO seminar by Dmitriy Morozov, Duke University

Persistence-Sensitive Simplification Simplified

We revisit the question of persistence-sensitive simplification on 2-manifolds. We call function g an ϵ -simplification of function f if the L_∞ distance between f and g is no more than ϵ , and the persistence diagrams of g are the same as those of f except all points within L_1 -distance at most ϵ from the diagonal are removed. We give an algorithm for constructing ϵ -simplifications that is considerably simpler than its predecessor, allows for hierarchical simplification, and results in a bounded subdivision of the domain.

Joint work with Dominique Attali, Marc Glisse, Samuel Hornus, and Francis Lazarus.