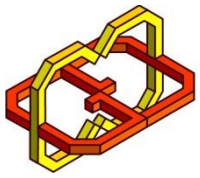

Technion-Israel Institute of Technology

Computer Science Department

Center for Graphics and Geometric Computing

CGGC Seminar

Nahum Farchi

Computer Science Department, Technion-Israel Institute of Technology

Integer-Only Cross Field Computation

We propose a new iterative algorithm for computing smooth cross fields on triangle meshes that is simple, easily parallelizable on the GPU and finds solutions with lower energy and fewer cone singularities than state-of-the-art methods.

Our approach is based on a formal equivalence, which we prove, between two formulations of the optimization problem. This equivalence allows us to eliminate the real variables and design an efficient grid search algorithm for the cone singularities. We leverage a recent graph-theoretical approximation of the resistance distance matrix of the triangle mesh to speed up the computation and enable a trade-off between the computation time and the smoothness of the output.

The lecture will be held on Sunday, 27.05.2018, at 13:30, Taub 337

הזמנה זו מהווה אישור כניסה עם רכב לטכניון