

## **Linear barycentric rational interpolation with guaranteed degree of precision in two dimensions**

The talk will address the problem of constructing a surface from an equispaced sample of a smooth function of two variables. Our approach is an extension of linear barycentric rational interpolation (LBRI). In recent years, this scheme, introduced in 1988 and improved in 2007 by Floater and Hormann, has turned out to be one of the most efficient infinitely smooth interpolants from equispaced data in one dimension (see R.B. Platte, “Algorithms for recovering smooth functions from equispaced data”, preprint). However, there does not seem to exist a straightforward way of generalizing it to two-dimensional non rectangular domains. In our presentation we shall present an attempt to extend to some higher dimensional domains the LBRI with guaranteed degree of precision introduced last year.

Jean-Paul Berrut, 1.7.2015