1078-41-46   **Thomas C Hangelbroek*** (`hangelbr@math.hawaii.edu`), 2565 McCarthy Mall, Honolulu, HI
96822. *Boundary effects, the polyharmonic Dirichlet problem and non-intersecting lattice paths.*
A well known aspect of kernel approximation is the undesirably low saturation orders that come about in the presence of
a boundary. These are easily observed numerically and have been demonstrated theoretically in the case of surface spline
approximation. By using an approximation scheme based on a layer potential solution of a class of elliptic boundary
value problems, these boundary effects can be overcome. In this talk, we will discuss the solution of the polyharmonic
Dirichlet problem, which is key to overcoming the boundary effects. By focusing on the problem in a half space, we
obtain an explicit, closed form solution related to a class of combinatorial problems: counting non-intersecting lattice
paths. (Received November 09, 2011)