Beyond the complexes: Toward a lattice-based number system

Jens Köplinger* and John A. Shuster

We give an interim report on progress towards number systems defined using lattices, following the vision sketched in [1]. Different morphisms are shown, some of which have subspaces that correspond to subspaces of conventional and p-adic number addition, multiplication, and exponentiation. Lattices include the square lattice in the plane, and the integral octonions on the E_8 lattice.

[1] J. Köplinger, J. A. Shuster, *1 + 1 = 2; A step in the wrong direction?*, FQXi essay contest (2012), http://www.fqxi.org/community/forum/topic/1449