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Generalized Deep holes and ℓ -duality

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Abstract

A generalized deep hole is an automorphism of the Leech lattice vertex operator algebra satisfying some special properties. Möller and Scheithauer showed that there is a 1 to 1 correspondence between the conjugacy classes of generalized deep holes and isomorphism classes of holomorphic vertex operator algebras of central charge 24 with nontrivial weight one spaces. In this talk, we will provide a lattice theoretical interpretation of generalized deep holes. In particular, we will show that a generalized deep hole will give rise to a “true” deep hole of the Leech lattice.