

**András Stipsicz**

**Title: Four-manifolds with Involutions**

**Abstract:** Using various constructions of exotic four-manifolds we show that a definite four-manifold with fundamental group  $Z_2$  and with positive second Betti number admits infinitely many distinct smooth structures provided it is smoothable. The construction utilizes fixed point free involutions on exotic manifolds. Using involutions with fixed points, we show an exotic embedding of the five-fold connected sum of the real projective space into the standard four-sphere.