1059-53-168 **Jaime Cuadros*** (jcuadros@math.mcmaster.ca), Hamilton Hall 311, 1280 Main Street West, Hamilton, Ontario L8S 4K1, Canada. *Null Sasaki η-Einstein Structures in Five Manifolds.*

We study null Sasakian structures in dimension five. First, we improve previous result of Boyer et al. and prove that simply connected manifolds diffeomorphic to $\#k(S^2 \times S^3)$ admit null Sasaki η-Einstein structures if and only if $3 \leq k \leq 21$. We also determine the moduli space of simply connected null Sasaki η-Einstein structures. This is accomplished using information on the moduli of lattice polarized K3 surfaces of the minimal resolutions of a K3 surface with cyclic singularities. Then, applying the non-degeneracy of the quadratic form in the Sasakian manifold, naturally induced by basic cohomology, we give an explicit expression for the moduli space. (Received February 22, 2010)