1037-57-323   **Jae Choon Cha*** (`jccha@postech.ac.kr`), Department of Mathematics, Pohang University of Science and Technology, Pohang, Gyungbuk 790-784, South Korea. *Hirzebruch-type invariants from iterated p-covers and slicing iterated Bing doubles.*

We define L-group-valued Hirzebruch-type invariants of 3-manifolds and links extracted from iterated p-covers. We show the invariance under homology cobordism and link concordance. Applications include the following: (1) "Exotic" homology cobordism types of rational homology 3-spheres indistinguishable via previously known invariants. (2) The first proof of the conjecture that all iterated Bing doubles of the figure eight knot are not slice. (3) The existence of "torsion" elements in an arbitrary depth of the Cochran-Orr-Teichner solvable filtration of link concordance.

   If time permits, we will introduce a covering link construction and discuss how it combines with the rational concordance theory to give new strong geometric obstructions to iterated Bing doubles being slice. These results are joint with Charles Livingston, Daniel Ruberman, and Taehee Kim. (Received February 05, 2008)