Concordance and homotopy of knots in homology spheres.

Any knot in $S^3$ may be reduced to a slice knot by crossing changes. Indeed, this slice knot can be taken to be the unknot. In this paper we study the question of when the same holds for knots in homology spheres. We show that a knot in a homology sphere is nullhomotopic in a smooth homology ball if and only if that knot is smoothly concordant to a knot which is homotopic to a smoothly slice knot. As a consequence, we prove that the equivalence relation on knots in homology spheres given by cobounding immersed annuli in a homology cobordism is generated by concordance in homology cobordisms together with homotopy in a homology sphere. (Received January 22, 2020)