$H(2)$-Gordian Distance of Knots

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Abstract. An $H(2)$-move is a local move of a knot, which is performed by adding a half-twisted band. It is known an $H(2)$-move is an unknotting operation. We define the $H(2)$-Gordian distance of two knots to be the minimum number of $H(2)$-moves needed to transform one into the other. We give several methods to estimate the $H(2)$-Gordian distance of knots; many of them are generalizations of the methods used to estimate an $H(2)$-unknotting number. Then we give a table of $H(2)$-Gordian distances of knots with up to 7 crossings.