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The one-visibility localization game

We introduce a variant of the localization game in which the cops only have visibility one, along with the corresponding optimization parameter, the one-visibility localization number ζ_1 . This parameter has some surprising connections to the isoperimetric inequalities, and to the reduced visibility cops and robber game. We explore these connections by studying upper and lower bounds for ζ_1 on k -ary trees and on Cartesian grids. We will also present the connections we have found to some other graph properties, such as tree-width and domination number.