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Distance distributions of random walks and open quantum random walks

#### Abstract

In this talk, I will introduce our recent works related to connections between (open quantum) random walks and hypergroups. Some of the results were obtained in joint works with Kenta Endo, Tomohiro Ikkai, Ippei Mimura and Hiromichi Ohno. Wildberger has introduced a method of constructing a hypergroup from a random walk on a graph. His method can be applied to an open quantum random walk on a distance set. Distance distributions of a random walk and of an open quantum random walk can be algebraically computed by the corresponding hypergroups.