

# A Study on the Topology Control Method for Bluetooth Scatternet Formation

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## Abstract

In this paper, a topology-configurable method for forming a Bluetooth scatternet is proposed. The heuristic method describes two mechanisms, the const-hop algorithm and the variant-hop algorithm. With a constant  $k$  parameter, the const-hop algorithm propagates  $k$  in its downstream direction to determine roots and constructs their associated subnets. With a constant  $k$ , a counter variable  $v$ , and a return variable  $r$  as parameters, the variant-hop algorithm generates appropriate roots locally and evenly configures the subnet size. A computer simulation shows that the proposed method achieves good network scalability and generates an efficient scatternet configuration for a Bluetooth multihop network.

Keyword : Ad-hoc networks, Bluetooth, sensor network, scatternet formation.