Transmit power minimization is one of the major research challenges in Relay-Assisted Cognitive Radio Networks. In this process, the transmit power of each individual relay is adjusted in such a way that the overall transmit power consumption at the relay network is minimized while satisfying the minimum Quality-of-Service (QoS) requirements of primary and secondary networks. In this paper, a similar constrained optimization problem is focused in which a secondary source-destination pair is assisted by a potential relay network having Cognitive Radio capabilities. A Fuzzy Rule Based System (FRBS) is proposed for intelligent relay selection such that total transmit power at the relay network is minimized while achieving the desired signal-to-noise ratio (SNR) at the destination and keeping the primary communication undisturbed. The effectiveness of the proposed scheme is highlighted through simulation results.
Transmit Power Minimization using Fuzzy Rule based System in Relay Assisted Cognitive Radio Networks


Index Terms
Keywords