Advanced Signal Processing Seminar 2, SS 2016 – Cognitive radio and location-aware wireless communications

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1 Cognitive Radio

A selection of important papers on Cognitive Radio can be found on a website hosted by the IEEE Communications Society:
http://www.comsoc.org/best-readings/cognitive-radio

The Cognitive Radio Concept [1, 2, 3]
Motivation and overall concept(s) of/for cognitive radios; definitions; challenges

“the propagation channel determines how much power arrives as interference to primary and other CR users”

Spectrum Sensing for CR [5, 6]
Spectrum sensing and robust cooperative spectrum sensing in fading channels.

Information Theoretic Perspective [7]
Information theoretical insights for different cognitive radio principles: efficiency gains for systems sharing spectral resources

Control of Radio Resources: Closing the Loop [8, 9, 10, 11]
Dynamically controled transmission power in a wireless network where systems compete for limited resources; metrics used at the node, network, and application levels; users competing for network resources

Cognitive Dynamic Systems [12, 3, 13]
“Cognitive Neuroscience and Engineering Learning From Each Other”
2 Location Awareness

Location Awareness [14, 15, 16]

Location information can support various performance indicators of a cognitive radio but also conventional wireless networks.

MINT—Multipath-Assisted Indoor Navigation and Tracking [17, 18, 19]

The TU Graz approach: location-awareness for robust positioning – exploiting multipath propagation

References


