

CQI-report Optimization for Multi-mode MIMO with Unitary Codebook Based Precoding

Helka Määttä¹, Olav Tirkkonen^{1,2}

Timo Roman

Helsinki University of Technology¹
Nokia Research Center²
helka.maattanen@tkk.fi

Nokia Devices
Timo.roman@Nokia.com

In this paper we consider the CQI reporting problem in MIMO downlink with adaptive switching between single user and multiuser mode and finite rate feedback. The feedback consist of channel directional information, which is the precoding weight, and channel quality information, which is a quantized value of estimated post processing SINR. The quantization of the channel directional information causes multiuser interference so that the post processing SINR after a linear receiver in multiuser mode is considerably different from the SINR in single user mode. The accuracy of the channel quality information plays a relevant role for adaptive modulation and coding. In order to achieve good performance without increasing feedback load by reporting accurate channel quality for both modes, we consider differential reporting for the multiuser mode. We optimize the channel quality reporting by considering an optimum differential quantization between single user and multiuser SINR.

Index Terms: Keyword1, Keyword2, Keyword3.

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