

# Analysis of Position-Related Information in Measured UWB Indoor Channels

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**Abstract:**

Conventional radio-based indoor localization systems often only make use of the direct signal path between an agent and the anchor nodes. Therefore, performance can deteriorate in non-line-of-sight situations, even though reflected multipath-components carry useful location-dependent information.

Using ultra-wideband signals, these components become resolvable. Bringing together both previously obtained results on the Cramer-Rao bound on the position error and measurement data along a reference trajectory, we perform an analysis of the position-related information contained in UWB indoor channels. Prior results are verified and important system parameters and their influence on the performance are discussed.