Virtual Drive Verification Rural Car - Car

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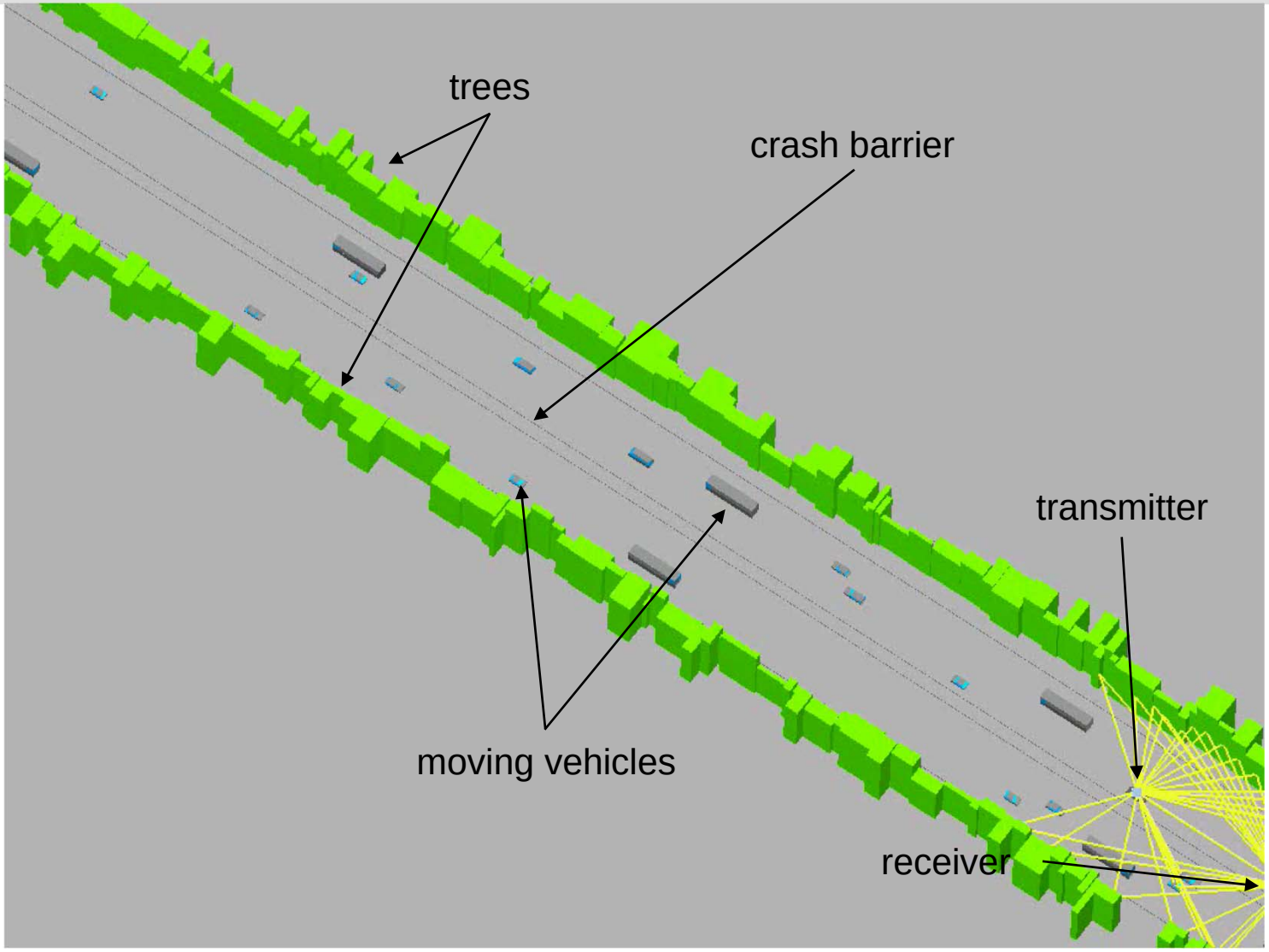
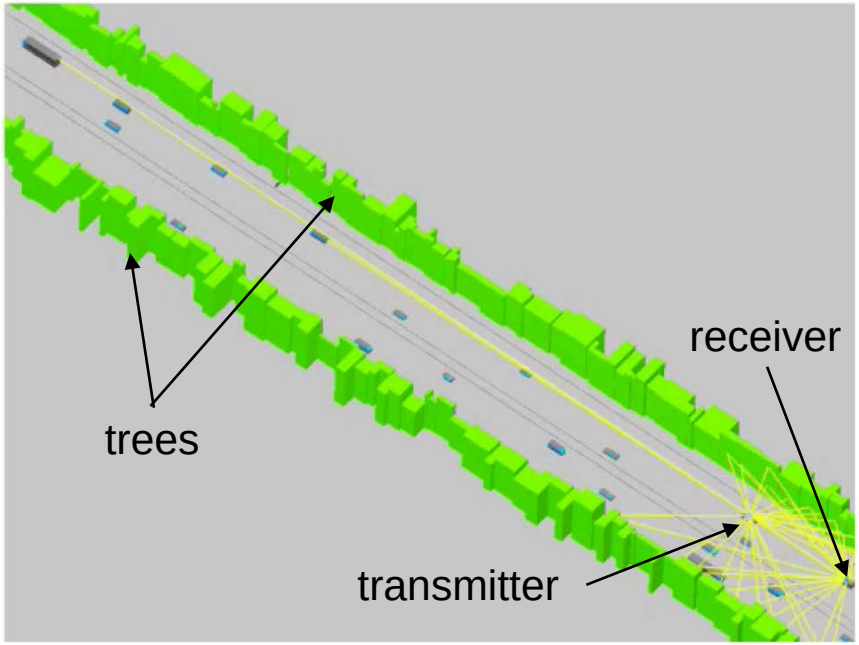
Freeway LOS Scenario



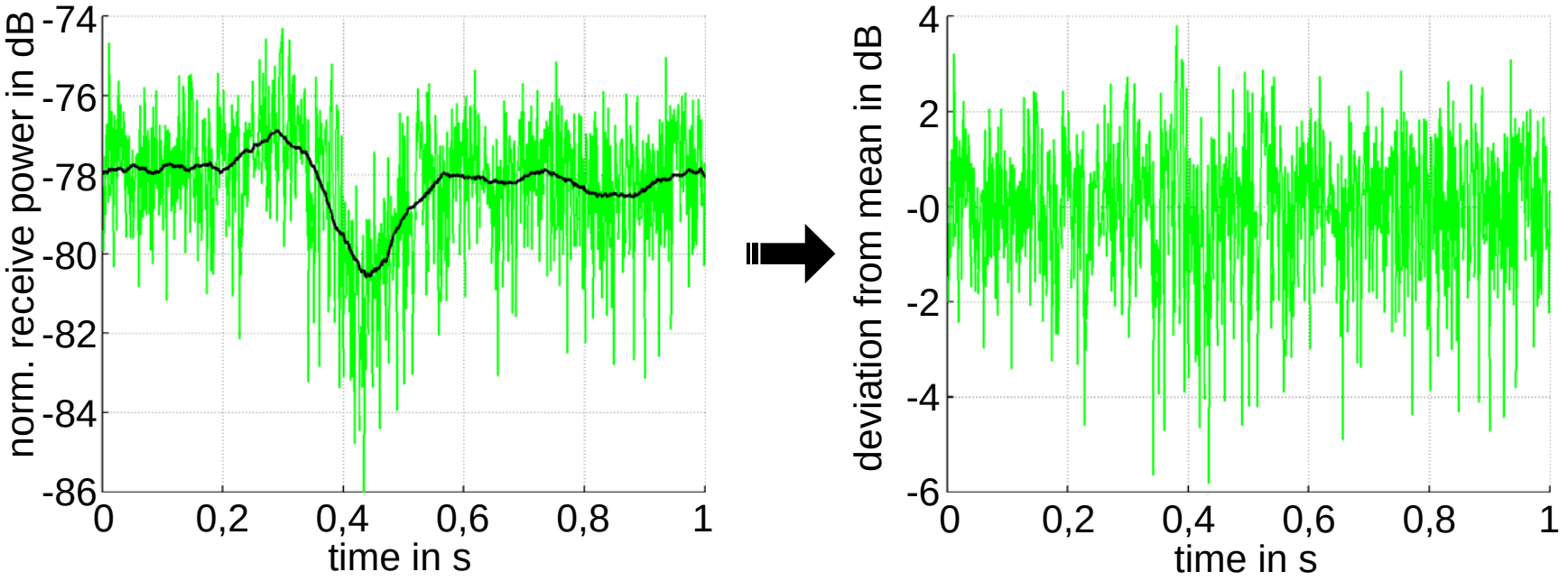
Comparison Measurement – Simulation (Freeway, LOS)

Measurement	Simulation

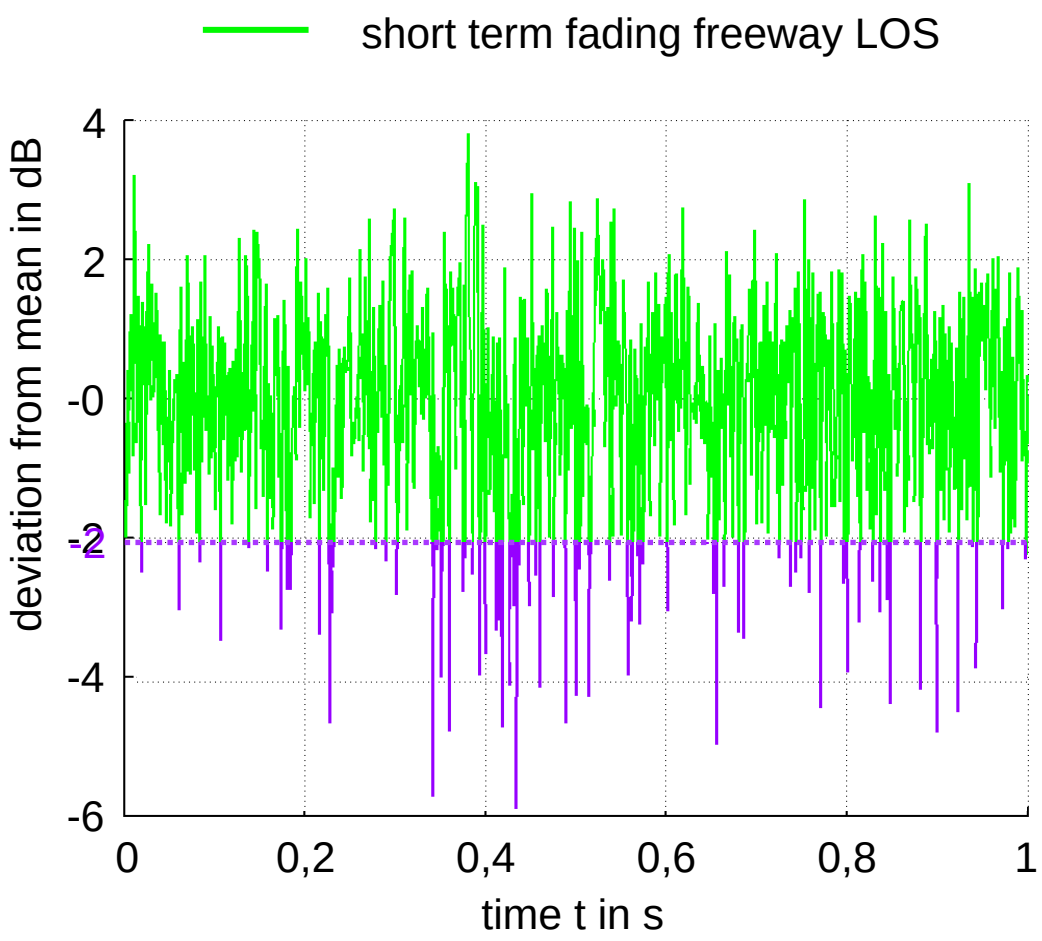


Measurement Freeway, LOS

fast fading slow fading	**mesurement**	fast fading



Short Term Fading Analysis Criteria

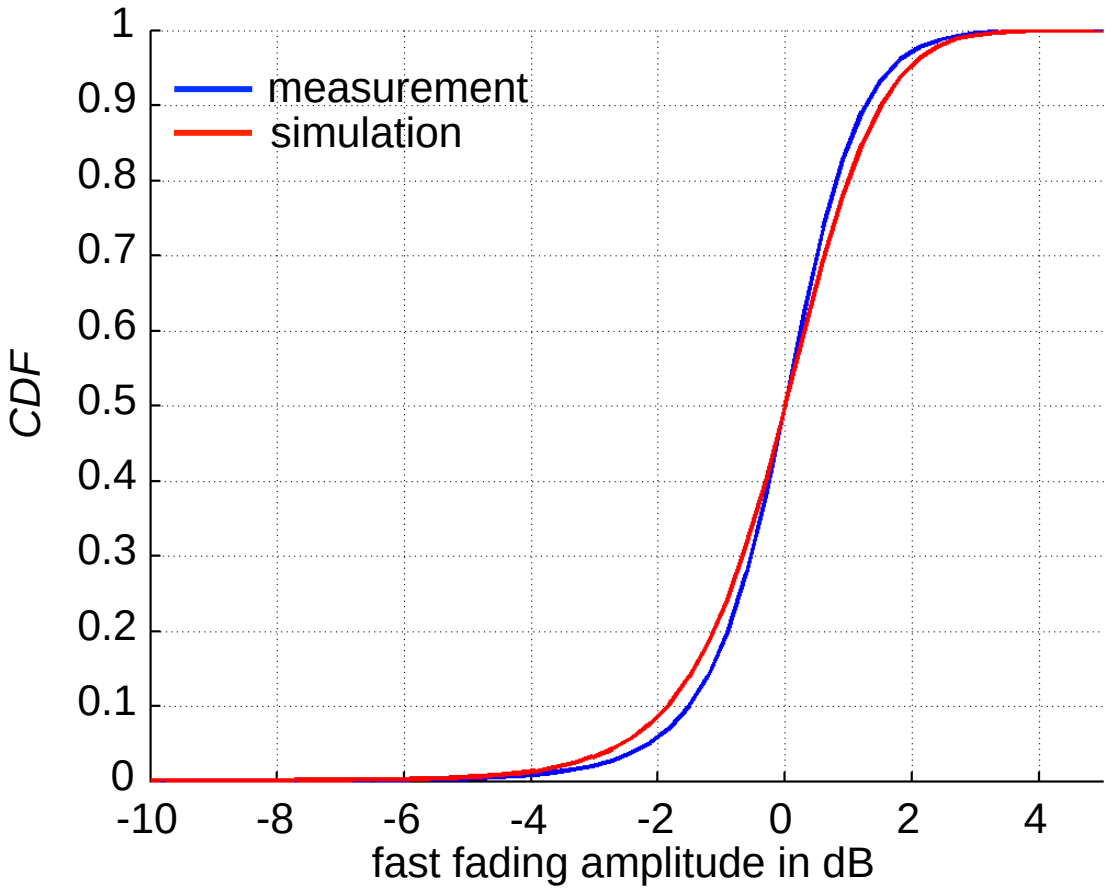


- *CDF*:
  Cumulative Distribution Function
- *LCR*:
  Level Crossing Rate
- *AFD*:
  Average Fade Duration

←threashhold for LCR, AFD

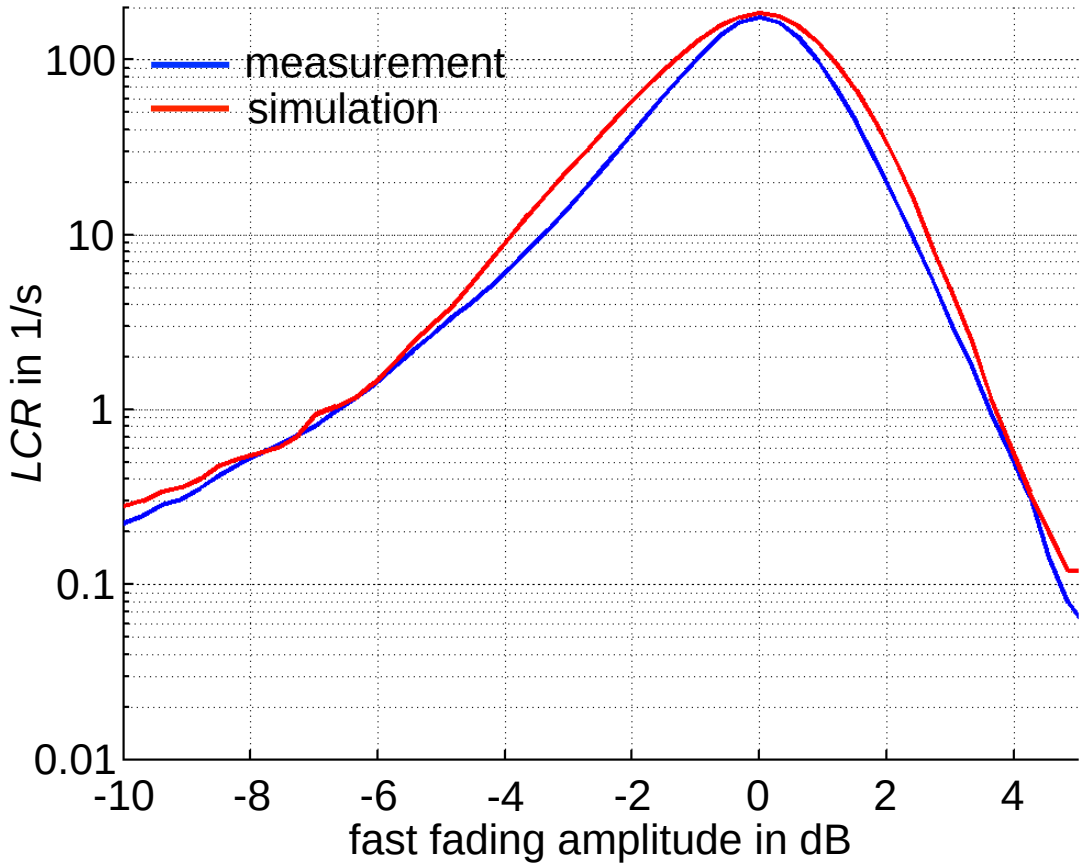
CDF Comp. Freeway Meas. / Simulation (LOS)

Cumulative distribution function (*CDF*) of fast fading (narrow-band analysis)



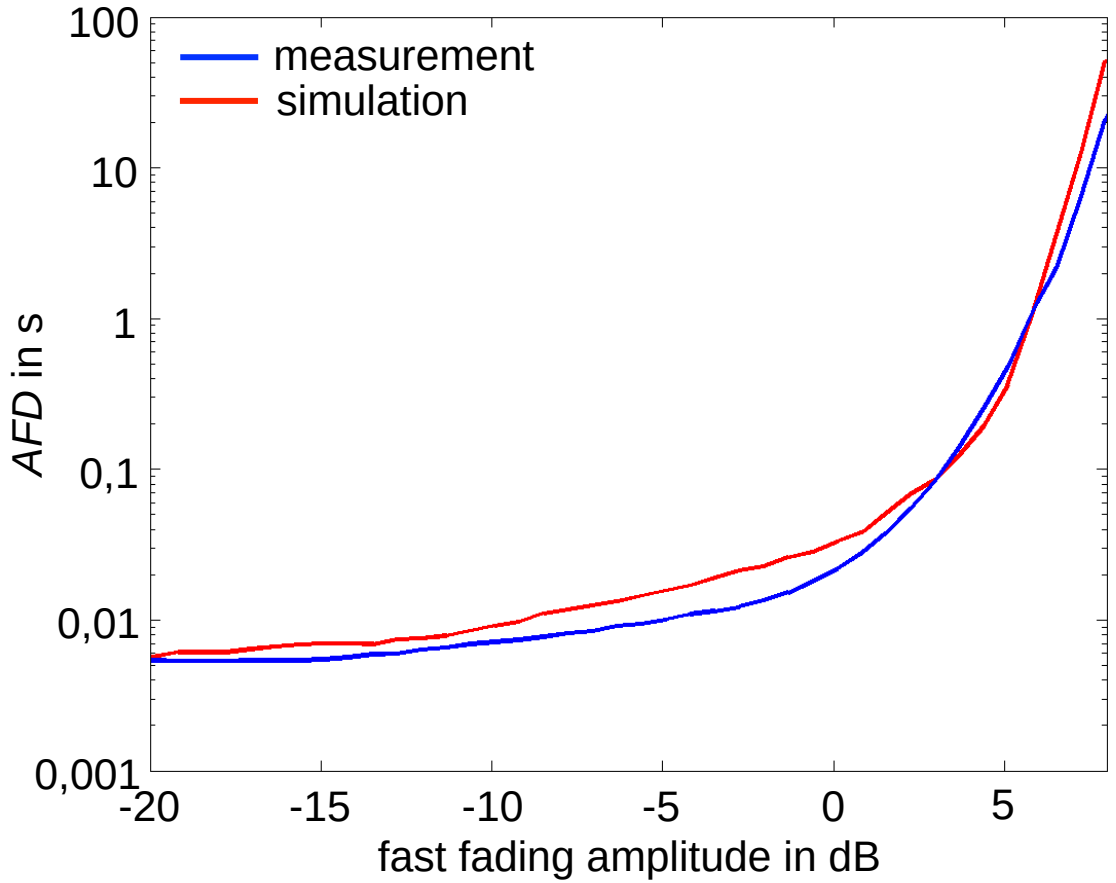
LCR Comp. Freeway Meas. / Simulation (LOS)

Level crossing rate (*LCR*) of fast fading
(narrow band analysis)



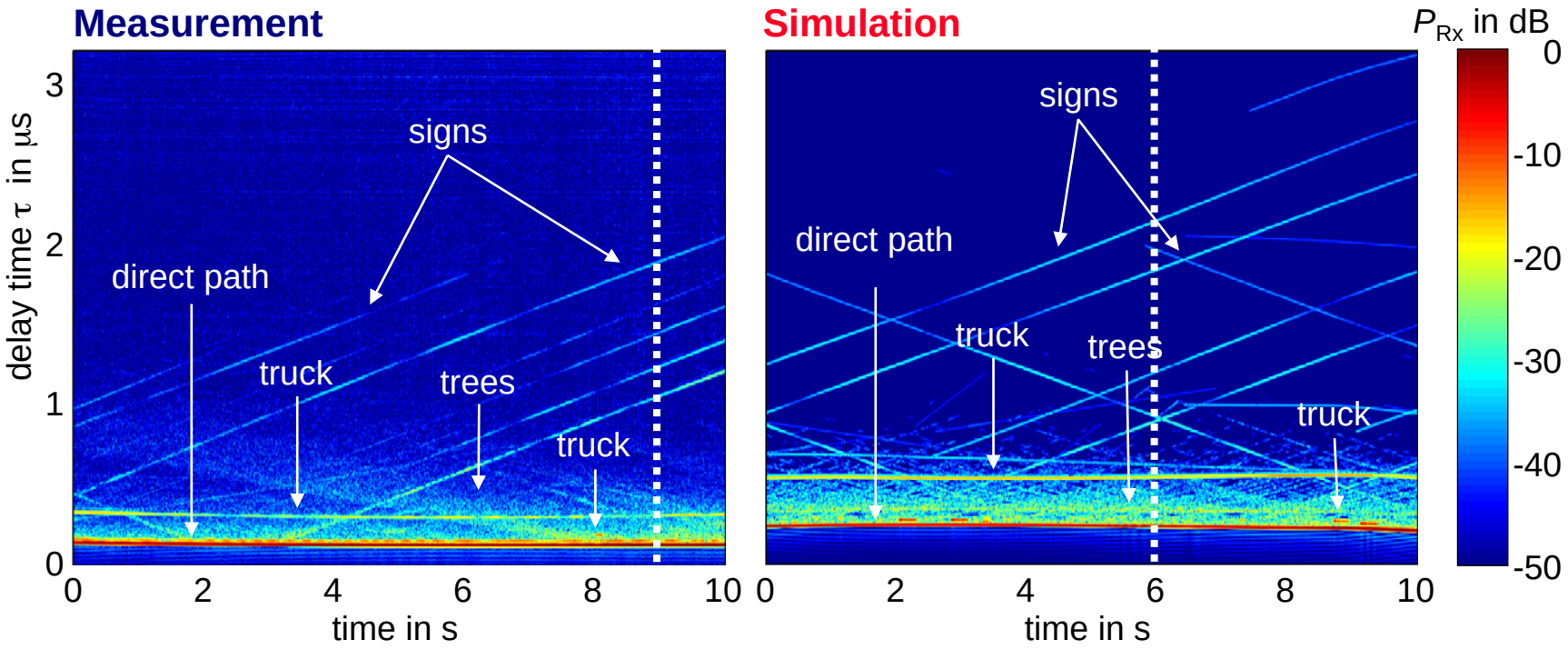
AFD Comp. Urban Measurement / Simulation

Average fade duration (*AFD*) of fast fading
(narrow band analysis)



Comp. Motorway Measurement / Simulation (LOS)

Characteristic power delay spectra PDP
(wide-band analysis, qualitative)



Simulation reflects narrow-band and wide-band
characteristics of the real channel very well.

Comp. Motorway Measurement / Simulation (LOS)

Characteristic power delay spectra PDP
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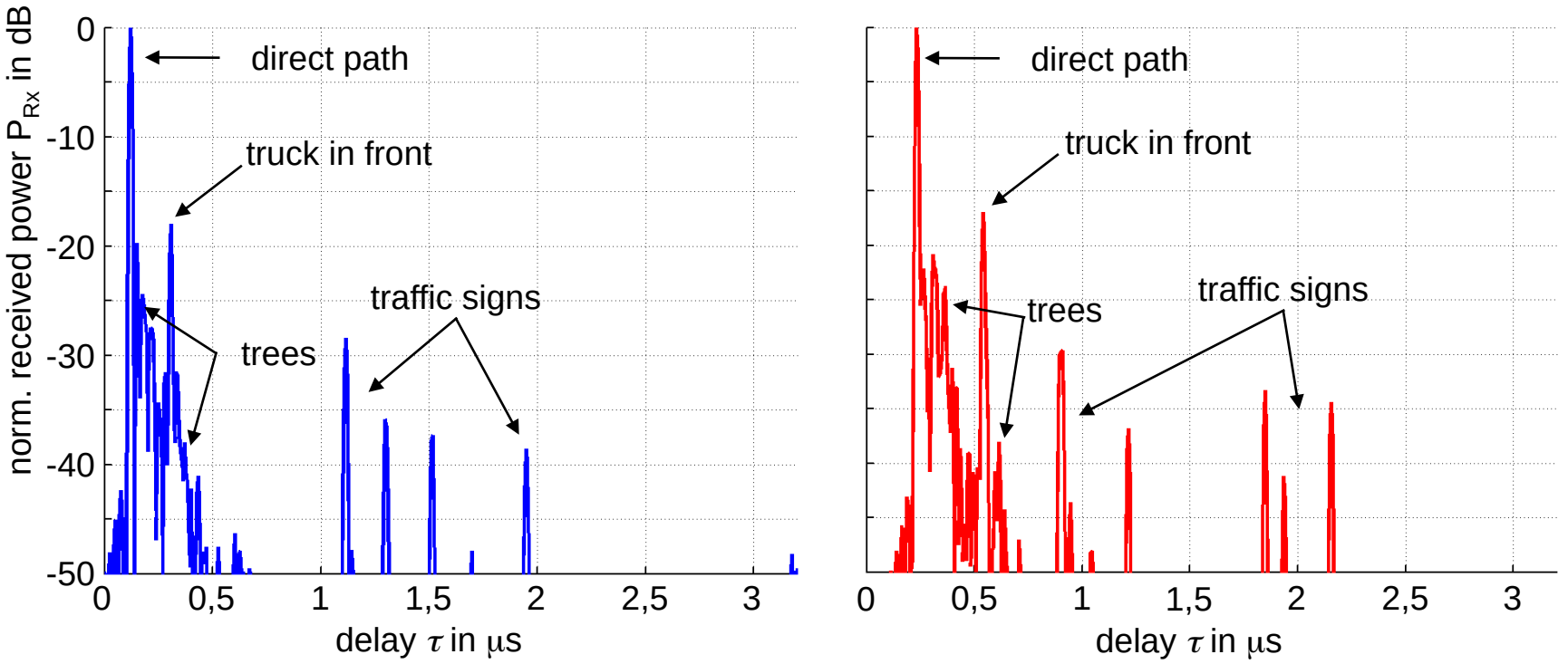
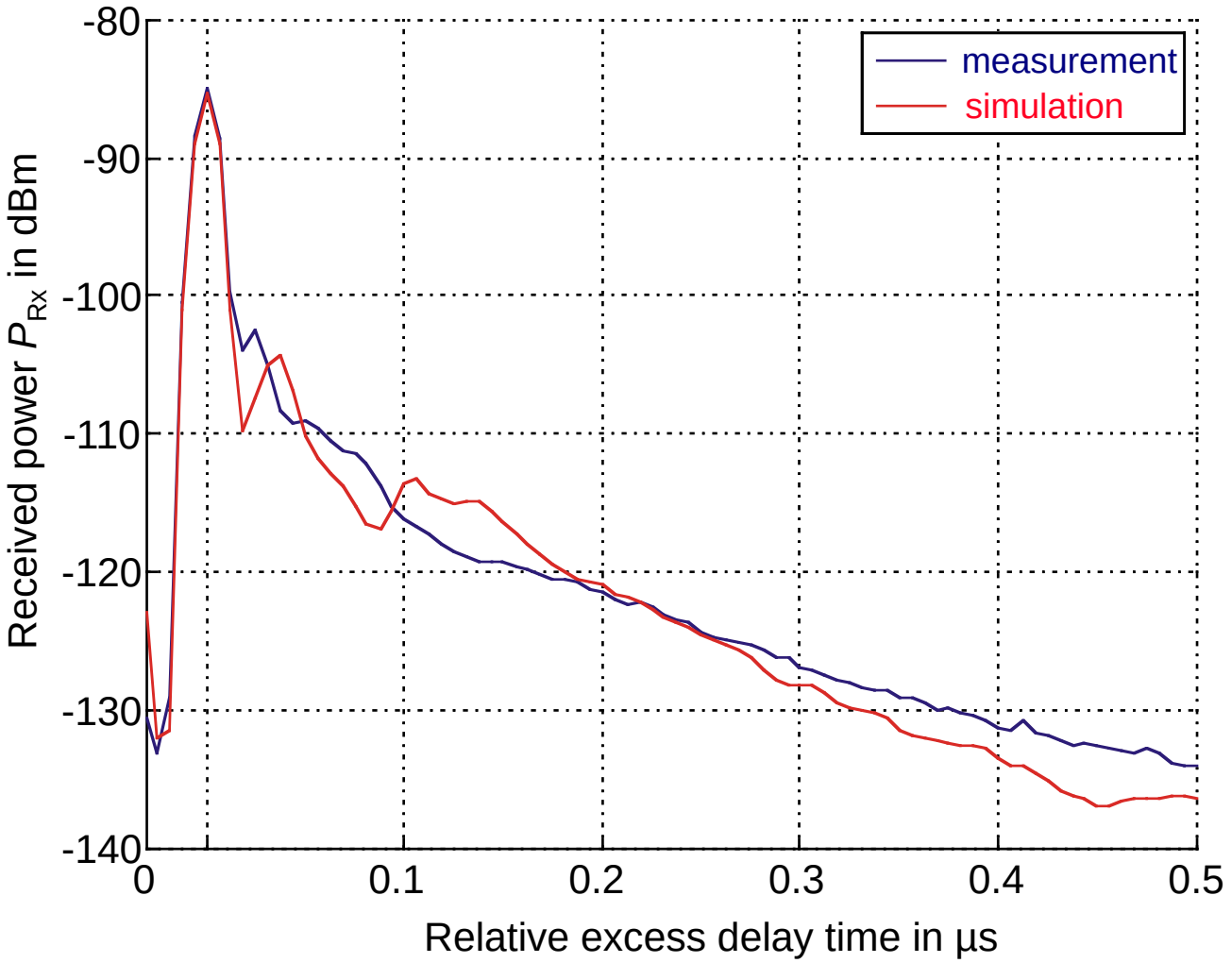
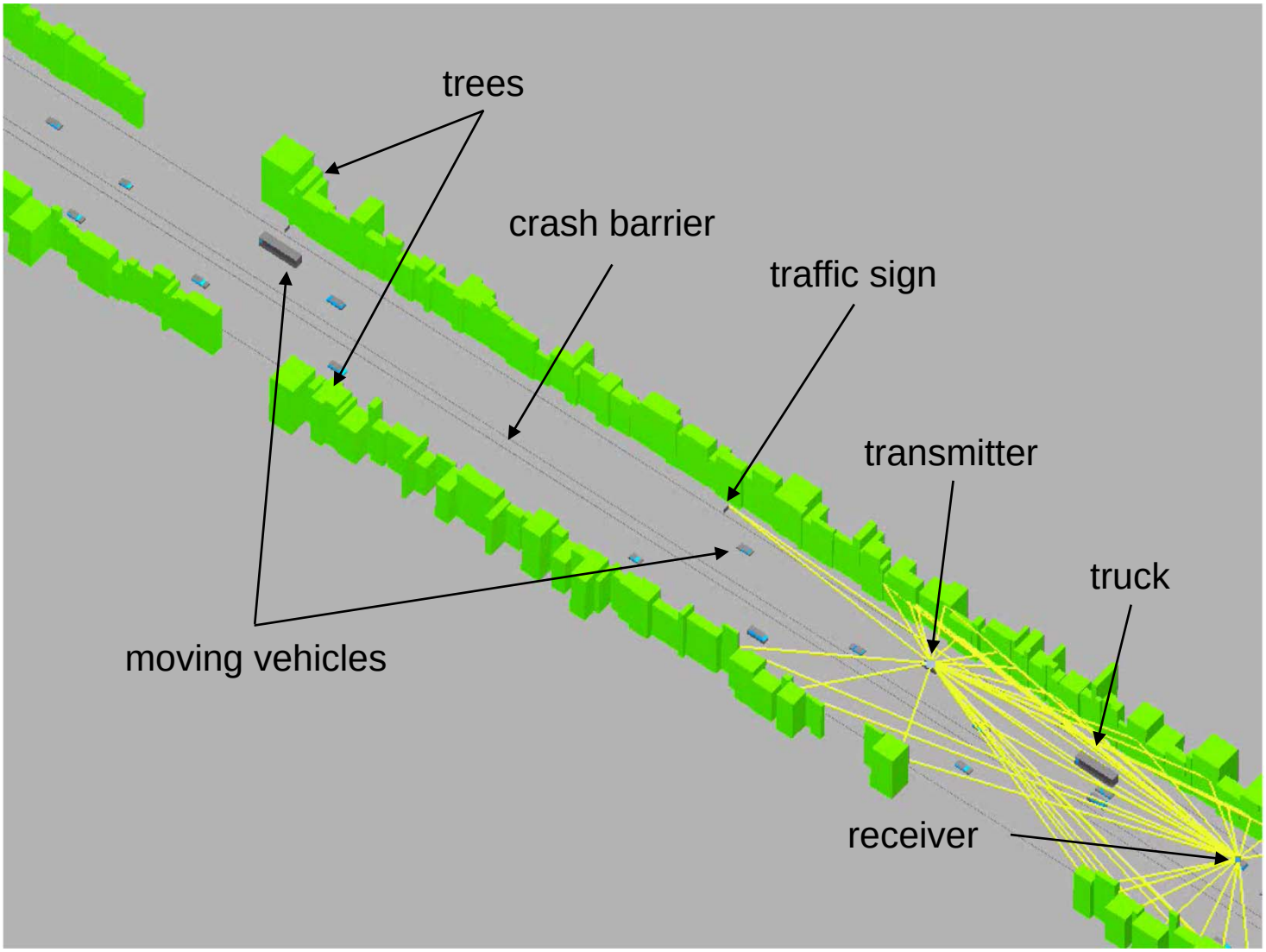


Simulation reflects narrow-band and wide-band
characteristics of the real channel very well.

Mean Power Delay Profile (Freeway, LOS)



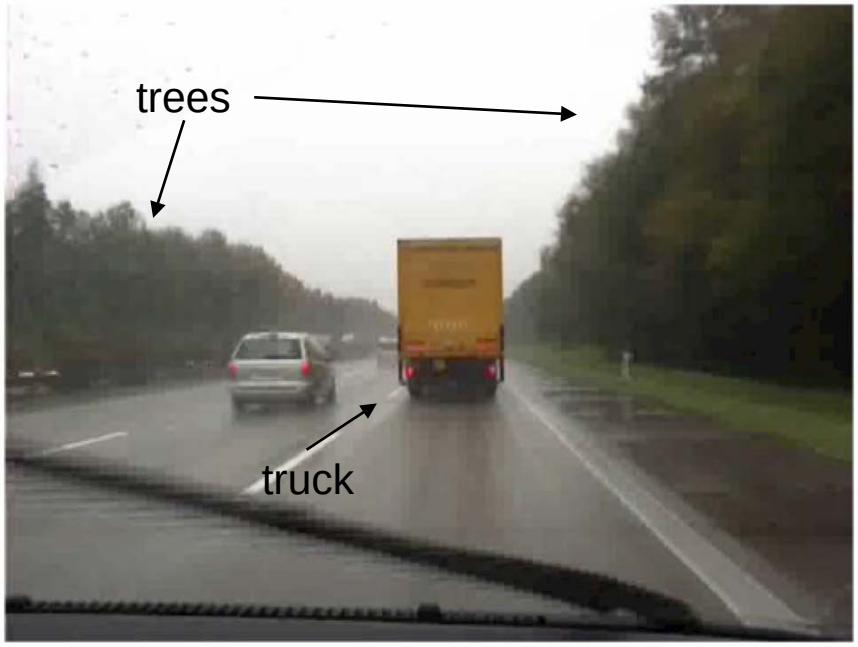
Freeway NLOS Scenario

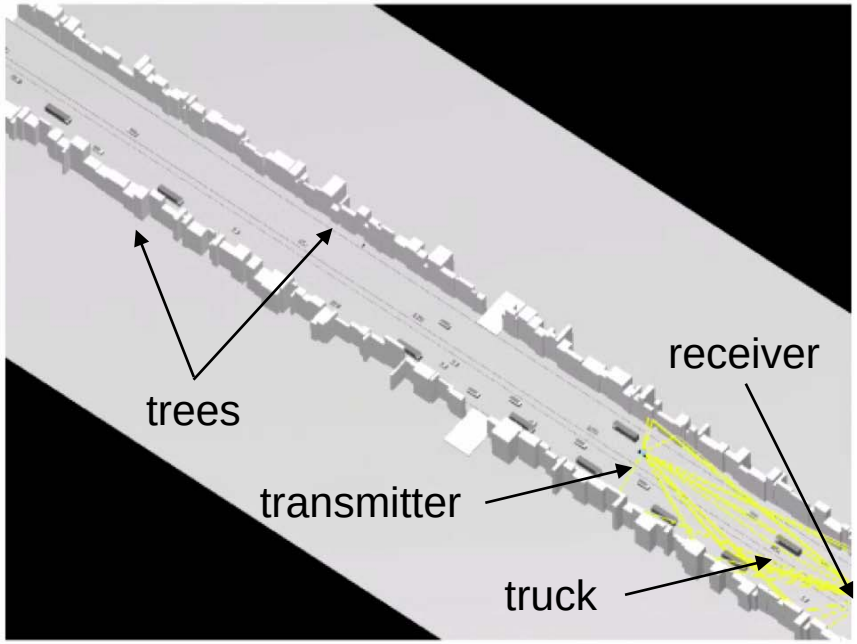


Freeway Measurement Scenario (NLOS)

Measurement

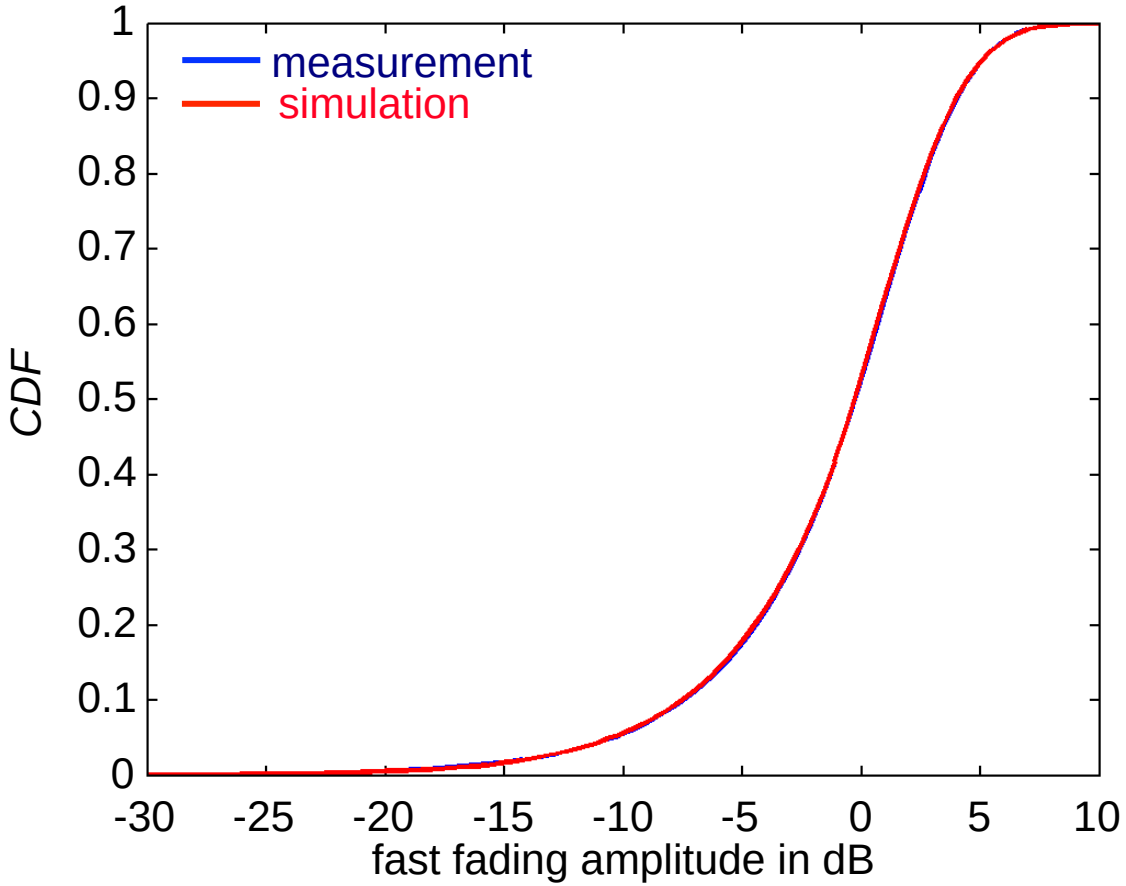
Simulation





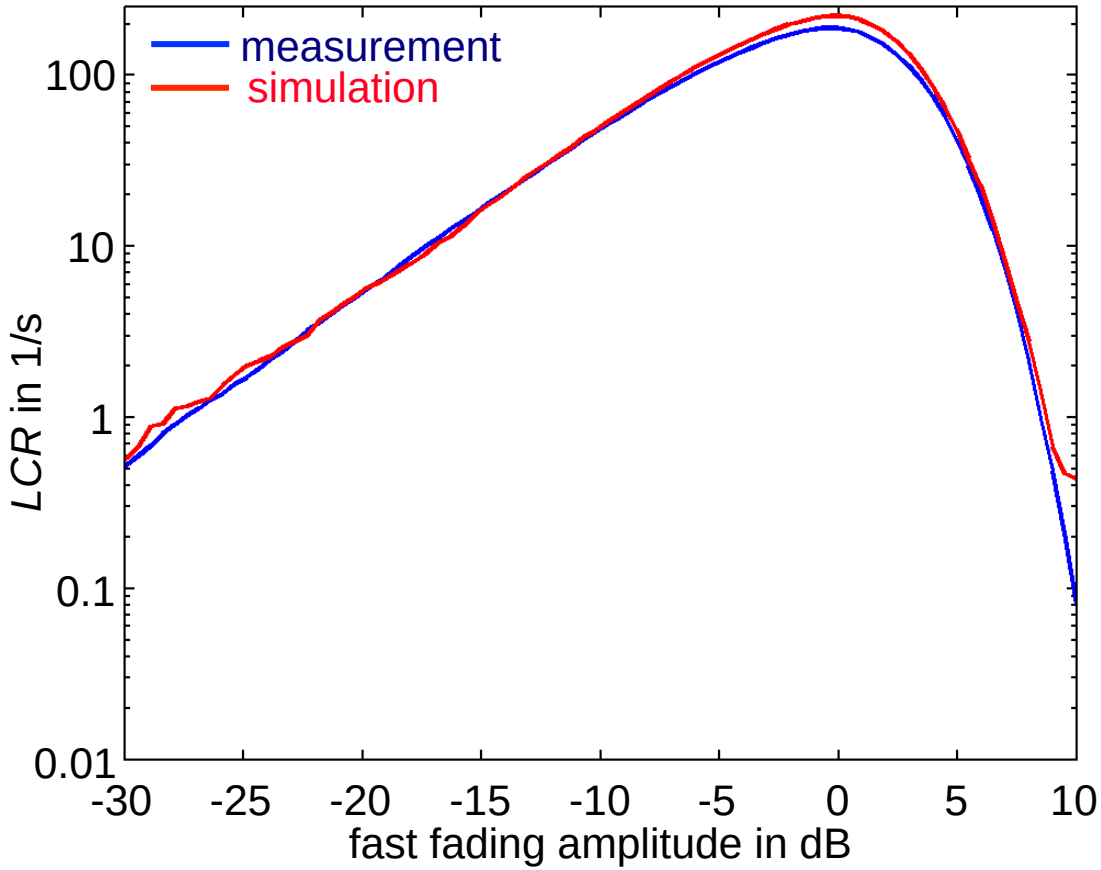
CDF Comp. Freeway Meas. / Simulation (NLOS)

Cumulative distribution function (CDF)
(fast fading)



LCR Comp. Freeway Meas. / Simulation (NLOS)

Level crossing rate (LCR)
(fast fading)



Conclusion

Ray tracing channel simulations represent the fading quite well.

This is the basis for:

- Diversity

- MIMO

antenna system design.