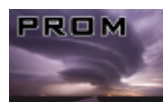


# PrePEP 2025

## Conference on Precipitation Processes – Estimation and Prediction

<b>Title:</b> Weather radar system design including antenna front-end aspects
<b>Instructor:</b> Dr. Stefano Turso, Fraunhofer-Institut für Hochfrequenzphysik und Radartechnik (FHR) <b>E-Mail:</b> stefano.turso@fhr.fraunhofer.de
<b>Duration:</b> 9 am - 5 pm including breaks
<b>Format:</b> in-person only
<b>Location:</b> Dept. of Meteorology, Auf dem Hügel 20, 53121 Bonn
<b>Abstract:</b> By means of a hands-on exercise, the workshop is designed to let participants experiment with several crucial aspects to be considered when designing a pulsed radar with both mechanically or electronically steered array antenna. On the basis of genuine specifications for commercial weather radars, topics like system architecture, power budget, background noise, waveform design, antenna arrays and feeding networks will be addressed. Dependencies in between different design areas will be highlighted to learn which parameters play a major role in setting up the overall performance. Tutoring will be provided to reach the workshop goals and achieve a system level overview of the many aspects involved in a radar design.
<b>Learning objectives:</b> <ul style="list-style-type: none"><li>• Link theory to prototyping through design</li><li>• Approach a typical design workflow hands-on</li><li>• Understand how to design a radar as a complex system</li><li>• Understand how design iterations are run for fine tuning</li><li>• Experience how trade-off choices lead to a feasible solution</li></ul>
<b>Technical requirement:</b> <ul style="list-style-type: none"><li>• The participants will bring their own laptop with preferably Matlab or Octave installed</li></ul>
<b>Prior knowledge required from participants:</b> <ul style="list-style-type: none"><li>• General knowledge on basic programming constructs</li></ul>



SPP 2115

Funded by



Deutsche  
Forschungsgemeinschaft  
German Research Foundation

