Uncertainty Quantification with TICRA Tools

Cecilia is Head of the Applied Electromagnetics Team and Product Lead for Reflector Antenna Systems Designs. She has a PhD from the Technical University of Denmark (DTU) and more than 15 years of experience in electromagnetic modelling of reflector antennas. She is currently deeply involved in the Copernicus Imaging Microwave Radiometer (CIMR) mission funded by the European Space Agency and the EU, a multi-beam radiometer for Earth observation making use of a large deployable reflector made in light mesh technology. As a member of the AEM team she actively participates in the test and development of all TICRA software products and assists TICRA's customers under their technical support contract.

Min is Head of the Computational Electromagnetics Team and Product Lead for Reflectarray & Periodic Structures. He performs and leads research and development for computational techniques and antennas for space applications as well as software development for TICRA's software packages. Min began his career in TICRA in 2009 when he started his PhD that aimed at improving the design and analysis accuracy of printed reflectarrays.

Abstract:

TICRA has for decades developed state-of-the-art antenna design and analysis software that is the industry standard for satellite antenna designers and manufacturers. The software tools are available in the common TICRA Tools (TT) framework and comprise five software products that work seamlessly together to model advanced antenna systems including reflector antennas, feed systems, reflectarrays and FSS, as well as satellite structures and more general antennas.

In January 2023 a new software product, Uncertainty Quantification (UQ), was added to the TT suite. Its unique capability is to predict the expected electrical performances of any antenna

when subjected to electrical or geometrical uncertainties. In this workshop, we will present the new UQ software applied on realistic antennas and the newest features in the TT suite.

Workshop outline:

The workshop will combine presentations and software demonstration and it will be divided into two parts:

1. Introduction to UQ (Uncertainty Quantification): what it is and what it can

2. Software demonstration of the UQ software applied on realistic antennas