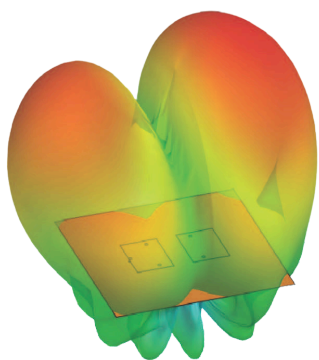


COLLOQUIUM SERIES

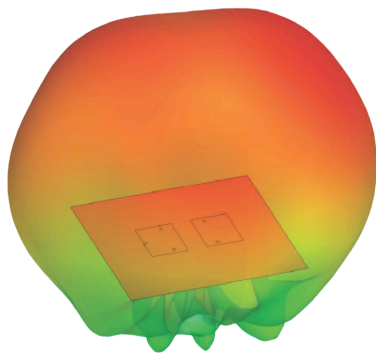
Non-reciprocity: A New Frontier in Antenna Engineering

Sasha S.Y. Cain

University of Illinois
Urbana-Champaign



Transmit mode



Receive mode

Antennas are the enabling technology of all wireless systems, serving as the link between a guided signal and free space. They are ubiquitous in modern life — appearing in nearly all consumer electronics, from computers to ‘smart’ light bulbs — and play a key role in critical infrastructure sectors like telecommunications and defense. However, since their invention in the late 1880s, antennas have been designed almost exclusively as reciprocal devices. This routine assumption of reciprocity imposes unnecessary restrictions on antenna design and deprives us of an important degree of freedom.

This talk introduces the concept of non-reciprocal antennas and discusses their advantages for data rates and system security. The operating principle of a novel non-reciprocal antenna will also be presented and supported by experimental results. Finally, future research directions will be identified, with specific attention given to how these projects relate to careers in engineering.

Tuesday, November 12

3:00 PM | RNS 210