An Optimal Receiving Antenna

Motivation

- Fundamental bounds help engineers to judge the performance of radiating devices.
- Reception performance of antennas depends strongly on electrical size.
- Evaluation of the upper bound to effective area makes use of reciprocity.

Challenge

- Try to meet the bounds with your antenna!
- Antenna is fed in the middle.

Did you know that?

...it takes a few seconds to calculate the bound, however, it takes more than three hours to find a decent antenna candidate from the pool of \(2^{160}\) candidates.

Learn more at...

- CEM Group | elmag.org/CEM
- Other topics: stored energy, characteristic modes, Q-factor