

# ANTENNAS, ARRAYS & CALIBRATION: BEAM FORMING AND BEAM STEERING



## Abstract

The antenna is an electromagnetic (EM) radiator that emits radio frequency power. In other words, it is a transducer that converts voltage [V] to the electric field [V/m] (or vice versa). This IEEE AP-S DL talk will focus on electromagnetic radiators, antennas, antenna arrays and calibration.

**Prof. Dr. Levent Sevgi** is a Fellow of the IEEE and the recipient of IEEE APS Chen-To Tai Distinguished Educator Award (2021). He received his B. Eng., M. Eng., and PhD degrees in Electronic Engineering from Istanbul Technical University (ITU) in 1982, 1984 and 1990, respectively. In 1987, while working on his PhD, he was awarded a fellowship that allowed him to work with Prof. L. B. Felsen at The Weber Research Institute / New York Polytechnic University York.

He was with Istanbul Technical University (1991–1998), TUBITAK-MRC, Information Technologies Research Institute (1999–2000), Weber Research Institute / NY Polytechnic University (1988–1990), Scientific Research Group of Raytheon Systems Canada (1998 – 1999), Center for Defense Studies, ITUV-SAM (1993 – 1998 and 2000–2002) and with University of Massachusetts, Lowell (UML) MA/USA as a full-time faculty (2012 – 2013), with DOGUS University (2001-2014), with Istanbul OKAN University (2014 - 2021), and with Istanbul ATLAS University (2022-2024).

He served four years (2020-2023) as an IEEE AP-S Distinguished Lecturer. Since Jan 2024, he has been the chair of the IEEE AP-S DL Committee. He served one-term in the IEEE AP-S AdCom (2013-2015) and one-term and as a member of IEEE AP-S Field Award Committee (2018-2019). He had been the writer/editor of the “Testing ourselves” Column in the IEEE AP Magazine (2007-2021), a member of the IEEE AP-S Education Committee (2006-2021), He also served in several editorial boards (EB) of other prestigious journals / magazines, such as the IEEE AP Magazine (2007-2021), Wiley’s International Journal of RFMiCAE (2002-2018), and the IEEE Access (2017-2019 and 2020 - 2022).

He has been involved with complex electromagnetic problems and complex communication and radar systems for nearly three decades. His research study has focused on propagation in complex environments; electromagnetic scattering and diffraction; RCS prediction and reduction; EMC/EMI modelling, simulation, tests and measurements; multi-sensor integrated wide area surveillance systems; surface wave radars; analytical and numerical methods in electromagnetics; FDTD, TLM, FEM, SSPE, and MoM techniques and their applications; bio-electromagnetics. He is also interested in novel approaches in engineering education, teaching electromagnetics via virtual tools.

He has given dozens of seminars, invited/keynote talks, organized/presented several tutorials, training sessions and short courses from half-day to three-days in universities/institutes all around the World. He has published more than a dozen special issues / sections in many journals as a guest editor and/or a co-guest editor. He has published many books / book chapters, over 180 journal/magazine papers / tutorials and attended more than 100 international conferences / symposiums.

His *h-index* is **37**, with a record of 5000+ citations (source: *Google Scholar*, July 2024).