

Full Name (English):	Yanlei Du	
Affiliated Institution and Title (English):	Aerospace Information Research Institute, Chinese Academy of Sciences, China Associate Professor	
<b>Biography</b> (Please provide in paragraph form within 500 words.)		
<p>Dr. Yanlei Du is currently an Associate Professor with the National Key Laboratory of Microwave Imaging, Aerospace Information Research Institute, Chinese Academy of Sciences. He received the B.S. degree from Chang'an University and Ph.D. degree from Chinese Academy of Sciences, in 2014 and 2019, respectively. During his Ph.D. program (2017–2019), he was a Visiting Scholar with the Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, MI, USA. From 2019 to 2021, he was a Postdoctoral Research Fellow with the Department of Electronic Engineering, Tsinghua University Beijing, China. His research interests include computational electromagnetics in applications of ocean remote sensing, radar polarimetry and satellite oceanography. He has authored or co-authored over 50 SCI/EI/CSCD indexed papers or book chapters, and is a lead author of a book in the area of polarimetric radar ocean remote sensing.</p> <p>Dr. Du served as the Technical Program Committee (TPC) member of several international conferences such as PIERS, IEEE IRC, etc. He was selected for the "Future Star" Talent Program of the Aerospace Information Research Institute, Chinese Academy of Sciences in 2023, and awarded the title of "Zhang Keqian Postdoctoral Fellow" by Tsinghua University in 2020. Dr. Du was a recipient of the Young Scientist Award from Photonics and Electromagnetics Research Symposium (PIERS) in 2021.</p>		
<b>Speech Title (English):</b>		
Polarimetric Radar Sea Clutter: Scattering Mechanism and Statistical Modeling		
<b>Speech Abstract</b> (Please provide in paragraph form within 500 words.)		
<p>Studies on the radar sea clutter have always been of great significance and interest for radar applications in target detection and recognition. In this work, we investigate the statistical modeling and some intrinsic characteristics of polarimetric radar sea clutter based on both numerical simulations and in-situ measurements. Monte Carlo method for rough ocean surface generation incorporating with the high-frequency electromagnetic scattering methods are employed to conduct the sea clutter simulations in full polarizations and at various frequencies. The measurements include the data obtained using a triple-band shore-based radar and the equivalent measurement data from spaceborne SAR (synthetic aperture radar) images. On the basis of the simulated and measured radar sea clutter data, the statistical modeling and characteristic analyses of sea clutter are conducted using typical product models and Mellin-kind statistics. The simulation results indicate that the high-resolution sea clutters present different texture properties at various wind speeds and wind directions. The spatial ergodicity of sea clutter distribution is also studied.</p>		