

# **The Ubiquitous Presence of Dynamic Boundary Conditions in Science**

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Dynamic boundary conditions play an essential role in accurately modeling complex physical interactions on the boundary. In this lecture we explain the role of dynamic boundary conditions in modeling diffusion processes, wave propagation, reaction-diffusion systems and problems in materials science. The connection between dynamic boundary conditions and Wentzell boundary conditions will be explained, and rigorous mathematical results related to these boundary conditions will be presented.