

Numerical simulations of various physical properties (electromagnetics, structures, and also fluid dynamics) are essential in the analysis and design of modern technology. For example, the May 2021 issue of IEEE Spectrum contains an interesting article about the possibility of sending a new lander to Venus. The lander would have to survive the descent through the high pressure atmosphere and landing (structures & fluid dynamics), communicate with a relay satellite in Venus orbit (electromagnetics), and stay “cool” enough – a relative term considering the Venus surface temperature of 880 degrees Fahrenheit - to function for a reasonable amount of time (fluid dynamics). Similar requirements can be established for applications closer to home, such as a 5G base station antenna on a nearby building.

Dassault Systemes SIMULIA offers a range of products to address all of these physics, by themselves, or in combination with each other. In this presentation, we will focus on the electromagnetics part and discuss a number of application examples - such as filters, antenna arrays, and matching circuits - and best practices using CST Studio Suite.