Solution of the Maxwell equations with splitting

R. Horváth

BME Institute of Mathematics, Egry J. u. 1., 1111 Budapest, Hungary
E-mail: rhorvath@math.bme.hu

The efficient numerical solution of the Maxwell equations is still a challenging task. In our presentation we introduce the classical finite difference time domain (FDTD) method and other methods that remove the strict stability condition of the FDTD method. We show that all these methods fit into the framework of operator splitting techniques. This discovery helps in constructing new efficient solution methods that allow even temporal changes in material parameters.