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Mathematical modeling of fungal growth. Preliminary report.

Mathematical modeling of the fungal growth has been studied since 1980s. The research would be applied in toxic control and environmental control, biological fuel, food industry and others. Some successful models to predict the fungal growth needed to solve the mixed hyperbolic-parabolic PDE systems. Different numerical methods were applied to understand the properties, such as the external and internal substrate concentrations, the biomass density, the hyphal tip density and others. Modifications to the existing numerical schemes and hence the numerical results will be presented in this talk. There are also discussions of the construction of the PDE system. (Received September 20, 2016)