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A nonlinear parabolic-hyperbolic PDE model for contact inhibition of cell-growth

We consider a parabolic-hyperbolic system of nonlinear partial differential equations which describes a simplified model for contact inhibition of growth of two cell populations. In one space dimension it is known that global solutions exist and that they satisfy the segregation property which reflects the inhibition mechanism: if the two populations are initially segregated - in mathematical terms this is translated into disjoint spatial supports of their densities - this property remains valid for all later times. In this talk, we use recent results on transport equations and Lagrangian flows to obtain similar results in the case of arbitrary space dimensions.