



Interface growth in the channel geometry and tripolar Loewner evolutions

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A class of Laplacian growth models in the channel geometry is studied using the formalism of tripolar Loewner evolutions, in which three points, namely, the channel corners and infinity, are kept fixed. Initially, the problem of fingered growth, where growth takes place only at the tips of slit-like fingers, is revisited and a class of exact exact solutions of the corresponding Loewner equation is presented for the case of stationary driving functions. A model for interface growth is then formulated in terms of a generalized tripolar Loewner equation and several examples are presented, including interfaces with multiple tips as well as multiple growing interfaces. The model exhibits interesting dynamical features, such as tip and finger competition.

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