

## **Numerical Simulations of the Epitaxial Growth of Thin Films**

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We consider a gradient flow modeling the epitaxial growth of thin films. The surface height profile satisfies a nonlinear diffusion equation with bi-harmonic dissipation. In this talk, we will review existing mathematical analysis and numerical methods on this type of equations. A new convex splitting energy stable scheme will be presented for the molecular beam epitaxial equation without slope selection.