Pressure build-up mechanism in a textured inlet of a slider bearing

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A computational fluid dynamics (CFD) analysis is performed on a lubricated textured contact in order to study performance of textured surfaces. The work encompasses simulations of a slider bearing with dimples. The bearing is modelled with a two-dimensional geometry. The full Navier-Stokes equations are solved under steady state conditions for a laminar and isothermal flow. The results are presented and the surface texture effects are analysed.