A model for Faraday pilot waves over variable topography

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In this talk we explore a simple hydrodynamic model capable of capturing the interaction between bouncing drops and a variable topography. We show that the reduced equations reproduce some important experiments involving the drop-topography interaction, such as non-specular reflection, refraction, and the single-slit pattern observed. Finally we comment on the main feature of the model, which is the treatment topography as regions of variable wave speed, and draw an analogy to Maxwell's equation in an inhomogeneous medium.