

# Pilot wave simulation notes

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## 1 Discretization of field and particle equations

According to [Bush's review paper], the field created by a walking droplet is of the form:

$$h(\mathbf{x}, t) = A \sum_{n=-\infty}^{\lfloor t/T_F \rfloor} J_0(K_F |x - x_p(nT_F)|) e^{-(t-nT_F)/(MT_F)}, \quad (1)$$

and the position of the droplet is determined by

$$m\ddot{\mathbf{x}}_p + D\dot{\mathbf{x}}_p = -mg\nabla h(\mathbf{x}_p, t). \quad (2)$$