## **Accepted Manuscript**

A lattice-based system for modeling fungal mycelial growth in complex environments

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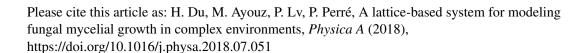
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#### **ACCEPTED MANUSCRIPT**

#### \*Highlights (for review)

#### Highlights of this work include:

- A novel, stochastic, lattice-based model for mycelial network is presented.
- The tip-extension algorithm eliminates the geometrical restriction of the lattice.
- The mycelial growth in porous media is modeled with the thigmotropism mechanism.
- The validated model predicts the biomass invasion and the network densification.
- The discrete microscopic model can be upscaled to a continuous, large-scale one.

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