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Growth and adaptation in a fungal hydraulic network BOHYUN KIM, UCLA Math, JOSEPH BECKMANN COLLABORATION, MATTHEW CHEUNG COLLABORATION, JOHN LENTFER COLLABORATION, RAMONA SASSE COLLABORATION — Biological networks such as fungal hydraulic networks have evolved to solve many of the same problems as human-built transportation networks. However, they must also briskly adapt to changing environments and modify their architecture without centralized control. Working with the model filamentous fungus, *Neurospora crassa*, we characterize the growth of the network and propose a mathematical model for the collaborative behavior of its cells at various scales. We compare our model with measurements of the complex distribution of flows and resources across the cellular network.

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