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Yongzhi Steve Xu* (yxu@cecasun.utc.edu), Department of Mathematics, University of Tennessee at Chattanooga, Chattanooga, TN 37403. *Evolutional solution and characteristic patterns of a free boundary problem model of ductal carcinoma in situ.* Preliminary report.

In this talk we discuss a free boundary problem model in a cylinder, a model mimicking the growth of a ductal carcinoma in situ (DCIS). DCIS refers to a specific diagnosis of cancer that is isolated within the breast duct, and has not spread to other parts of the breast. As tumour growth strongly depends upon the availability of nutrients, its diffusion through the growth material is introduced in the description of model. We study the characteristic stationary solutions of the model, and compare them with the patterns found in DCIS. We also study the evolution solution and the growth of the DCIS.

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