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Heng Li*, Department of Mathematics, University of Louisville, Louisville, KY 40292, **Yongzhi Xu**, Department of Mathematics, University of Louisville, Louisville, KY , and **Jianrong Zhou**, Department of Mathematics, Foshan University, Peoples Rep of China. *A free boundary problem arising from DCIS mathematical model.*

Ductal carcinoma in situ – a special cancer – is confined within the breast ductal only. We derive the mathematical ductal carcinoma in situ model in a form of a nonlinear parabolic equation with initial, boundary, and free boundary conditions. Existence, uniqueness, and stability of problem are proved. Algorithm and illustrative examples are included to demonstrate the validity and applicability of the technique. (Received February 01, 2017)