

Fluctuations and Size Control During the Cell Cycle of Budding Yeast

Eric Siggia

Center for Studies in Physics and Biology, The Rockefeller University, New York, NY 10021, U.S.A.

Time lapse movies of yeast underdoing 5-6 cycles of division are a unique data source for cell to cell variation during the most important process the cell does, growth and division. With the aid of multiple fluorescent markers we can time various submodules within the cell cycle and ask whether their variability is due to small numbers of molecules or sensitivity to the environment. We can also show the existence of various feedback circuits, which would be obscured in population measurements. Size control viewed at the single cell level operates only for small daughter cells.