

Abstract Submitted
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Nucleus dynamics in budding yeast CARSTEN DIETVORST, Colorado State University, Fort Collins, CO, GRZEGORZ SIKORA, Wroclaw University of Science and Technology, Wroclaw, Poland, STEVEN MARKUS, DIEGO KRAPF, Colorado State University, Fort Collins, CO — Timely nuclear movements are essential during many cellular processes such as during brain development in animals, and for proper chromosome inheritance during growth and development of various fungal species. A complete understanding of the process of nuclear migration requires an understanding of the physical properties of the nucleus and the cytoplasm. The budding yeast *Saccharomyces cerevisiae* makes an ideal platform for research due to their genetic tractability, and ease of imaging. We have imaged the nuclei of yeast cells using confocal microscopy, and analyzed the nuclear motion. Our data show that the nuclei experience periods of subdiffusive confinement with occasional periods of superdiffusive directed motion that are attributed to the effect of molecular motors. Future studies will permit us to develop a quantitative description of the viscous and elastic components of the nucleus and cytoplasm that are responsible for the subdiffusive confinement and the properties of external forces required to induce superdiffusive movement.

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