

Abstract Submitted
for the DFD13 Meeting of
The American Physical Society

Measurement of traction forces exerted by the foot in motion¹

MARIA FERNANDA LUGO-BOLANOS, SHREYAS MANDRE, Brown University, MADHUSUDHAN VENKADESAN, National Centre for Biological Science-Tata Institute of Fundamental Research, MAHESH BANDI, Okinawa Institute of Science and Technology Graduate University — When walking and running, the foot acts like a flexible viscoelastic object that cushions impact and stores elastic energy. To characterize the functioning of the foot as a spatially extended and flexible object, we require all components of the ground traction forces to be measured with sufficient spatial and temporal resolution. We present here the theoretical underpinnings of a method based on photoelasticity to measure these traction forces with millimeter scale spatial, and millisecond temporal resolution.

¹Human Frontier Science Program

Maria Fernanda Lugo-Bolanos
Brown University

Date submitted: 02 Aug 2013

Electronic form version 1.4