

MAR15-2014-020062

Abstract for an Invited Paper
for the MAR15 Meeting of
the American Physical Society

Quantifying the Flow of Information Between Interacting Systems¹

CHRISTOPHER JARZYNSKI, Univ of Maryland-College Park

Physical systems, including biological organisms, are capable of gathering information about their surroundings and acting in response to that information. When two physical systems interact with one another, each one affects and is affected by the other. It is often convenient to view such interactions in the context of measurement and feedback, with one system observing and exercising control over the other. I will discuss fundamental limits that thermodynamics places on such processes, when the systems are small and thermal fluctuations play an important role.

¹This research is supported by the U. S. Army Research Office under contract number W911NF-13-1-0390.