

Abstract Submitted
for the NWS06 Meeting of
The American Physical Society

A Tale of Two Frames: a relativistic gedankenexperiment ACHIN SEN, Eastern Washington University — A simple thought-experiment involving the analysis in only two inertial frames will be used to derive all the standard results of the special theory of relativity. Our method identifies the roles of the zeroeth, the first, and the second postulates and requires only the use of simple geometry and algebra. The approach can also be used to underscore the simplicity associated with the use of the light cone variables. The derived results include the phenomena of time dilation, length contraction, Doppler shift, the invariance of the spacetime interval, and the Lorentz transformation formula.

Achin Sen
Eastern Washington University

Date submitted: 21 Apr 2006

Electronic form version 1.4