1128-92-336 **Matthew J. Pruett*** (matthew.pruett@wsu.edu), Matthew Pruett, 14204 NE Salmon Creek Ave, Vancouver, WA 98686, **Nikolay Strigul** (nick.strigul@wsu.edu), Dr. Nick Strigul, 14204 NE Salmon Creek Ave, Vancouver, WA 98686, and **Kevan B. Moffett**. *Direct Canopy Interception Measurements using the Euler Bernoulli Equation.*

Interception is a key hydrological process whereby the plant canopy captures and holds precipitation. Traditional methods of measuring or estimating interception are laborious and inaccurate. Utilizing a parametrized and simplified form of the Euler-Bernoilli beam equation, $\frac{d^2}{dx^2}(EI\frac{d^2w}{dx^2}) = q$ an in situ technique was reinvestigated for directly measuring intercepted water mass. A mature Acer macrophyllum (Bigleaf maple) branch was instrumented with 2 strain gauges logging at 1 minute intervals for 3 months while collecting weather and Leaf Wetness Sensor (LWS) data. The periodic daily signal of night tree water uptake and daytime branch mass (water) loss from transpiration was evident in the strain gauge data and had to be removed to show the effects of rain alone; novel empirical and modeling approaches to do so were compared. Eight rain events of various sizes were recorded during the experiment, ranging from 0.8 to 17.6 mm of rainfall over a 24-hour period. Further modeling will examine the influence of meteorological conditions on branch rainwater interception dynamics, provide effective calibration for qualitative LWSs, and extract important metrics like the maximum water mass such a branch can hold for a given storm size and intensity. (Received February 28, 2017)