

## **An overview of the carbon exchange components (NEE, GPP, Reco) of an old hemiboreal pine forest: the influence of the $u^*$ threshold choice**

Alisa Krasnova<sup>1,2</sup>, Ülo Mander<sup>1</sup>, Kaido Soosaar<sup>1</sup>

<sup>1</sup>Department of Geography, University of Tartu, Vanemuise 46, Tartu 51014, Estonia

<sup>2</sup>Institute of Agricultural and Environmental Sciences, Estonian University of Life Sciences, Kreutzwaldi 5, Tartu 51014, Estonia

Hemiboreal forests form a transitional area between boreal and temperate zones. It is characterised by higher biodiversity, complex stand structure and variable microclimate compared to more northern forests. Soontaga field station is located in the Southern Estonia in an old (~200 y.) pine forest with spruce trees forming a second layer. To study the CO<sub>2</sub> exchange, eddy-covariance system consisting of LI-7200 gas analyser and Gill HS-50 sonic anemometer was installed on a 39m high scaffolding tower. We present the overview of the ecosystem carbon exchange estimated for three consecutive years (2016-2018). In particular, the focus of the current study is on the following aspects: 1) the influence of the friction velocity ( $u^*$ ) filtering threshold choice on the three components of carbon exchange (NEE, GPP, Reco) and 2) the difference between soil and air temperatures chosen as the main driver in nighttime data-based flux partitioning methodology.