

Gökben Demir

Position: Ph.D. Student
Project: B02
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Research Interests

- Estimation of soil water content
- Soil water content dynamics
- Interactions of soil, vegetation, and atmosphere

Current Project

Ph.D. thesis, working title: "Effect of canopy-induced heterogeneity on water flux patterns below the root zone". The work is a part of Collaborative Research Center AquaDiva.

Transformation of water and elements from the top of the canopy to below the root zone is affected by several processes varying at small scales and organized around vegetation. Canopies redistribute precipitation and create spatial variability that influences recharge, transpiration and other nonlinear ecohydrological and biogeochemical process. While canopies enhance small-scale heterogeneities, soil moisture might be equalized by root water uptake and hydraulic redistribution. I want to understand either those small-scale heterogeneities and the equalization phoneme enhance or destroy flow and matter transport into the deeper layers. By comparison water fluxes of the forest and the grassland plot of Hainich CZE, I want to explore the effect of canopy-induced heterogeneities within the forest enhance the net water fluxes.

Curriculum Vitae

05/2018 – now Ph.D. student at Friedrich-Schiller-University of Jena under supervision
Jun.-Prof. Dr. Anke Kleidon-Hildebrandt, Institute of Geosciences

03/2016 – 04/2018 Research assistant as a scholar graduate student within the research project
“Determination of Hydrological Cycle Parameters Using Conceptual Hydrologic
Modeling”

- 07/2015 – 03/2018 M.Sc. in Civil Engineering Department (Water Resources Division) at Middle East Technical University, Thesis: “Soil Water Content Estimation from Point-Scale to Plot-Scale” as a part of 1003 Tubitak Project: “Determination of Hydrological Cycle Parameters Using Conceptual Hydrologic Modeling”
- 09/2009- 06/2015 B.Sc. in Civil Engineering Department at Middle East Technical University
- 06/2014- 08/2014 Internship at Sonar Drilling & Geological Research Center (Ankara, Turkey)

Conference contributions

Demir, G., Akyurek, Z., and Binley, A. (2018) Soil moisture estimation from point-scale to plot-scale. *EGU*; 8-13 April, Vienna, Austria. (PICO)

Akyurek, Z., Binley, A., **Demir, G.**, and Abgarmi, B. (2017) Water content estimated from point scale to plot scale. *AGU*; 11-15 December, New Orleans, USA. (Poster)

Demir, G., Akyurek, Z., Binley, A., Yucel, I., Kentel, E., Merzi, N., Yilmaz, T., and Yanmaz, M. (2017) Establishing a Critical Zone observatory site in Turkey. *EGU*; 23-28 April, Vienna, Austria. (Poster)

Demir, G., and Akyurek, Z. (2016) Taşkın modellemelerinde sayısal yükseklik modellerinin (SYM) Hassasiyetinin önemi. *4.Ulusal Taşkın Sempozyumu*; 23-25 November, Rize, Türkiye. (Oral Presentation)

Demir, G., and Akyurek, Z. (2016) The importance of precise DEM in modelling floods. - *European Geosciences Union General Assembly*; 17-22 April, Vienna, Austria. (Poster)

Ozkaya, A., Bolat, K., **Demir, G.**, and Akyurek, Z. (2015) Meteoroloji RADAR yağış verisinin Hidrolojik modellemede kullanımı açısından değerlendirilmesi. *UZALMET*; 3-5 November 2015, Antalya, Türkiye (Oral Presentation)