

Opis delovnega mesta mladega raziskovalca/ke (Description of the Young Researcher's position)

1. Članica UL (UL member):

Fakulteta za gradbeništvo in geodezijo / Faculty of Civil and Geodetic Engineering

2. Ime, priimek in elektronski naslov mentorja/ice (Mentor's name, surname and email):

Mojca Šraj, mojca.sraj@fgg.uni-lj.si

3. Raziskovalno področje (Research field):

2.20 Vodarstvo (Hydrology)

4. Opis delovnega mesta mladega raziskovalca/ke (Description of the Young Researcher's position):

Vključuje morebitne dodatne pogoje, ki jih mora izpolnjevati kandidat/ka za mladega raziskovalca/ko, ki niso navedeni v razpisu za mlade raziskovalce.

slo: Mladi raziskovalec/mlada raziskovalka (v nadaljevanju MR) bo delal na raziskovalnem področju v okviru uveljavljenega raziskovalnega programa P2-0180 Vodarstvo in geotehnika: orodja in metode za analize in simulacije procesov ter razvoj tehnologij. Program pokriva inženirske (tehniške) in naravoslovne vsebine, povezane z vodo in vodarstvom. V okviru dela na doktorski disertaciji in podiplomskega študija bo MR sodeloval pri mednarodnih in domačih raziskovalnih projektih in strokovnih nalogah Katedre za splošno hidrotehniko UL FGG in pri aktivnostih Unesco katedre za zmanjševanje tveganj ob vodnih ujmah UL (www.unesco-floods.eu). Doktorska disertacija bo v dogovoru z MR usmerjena v raziskovanje hidroloških procesov v naravnem okolju in na reševanje inženirskih problemov s širšega področja hidrologije in skladno s predznanji in željami kandidata. MR bo izvajal lastne meritve različnih meteoroloških in hidroloških spremenljivk ter se tako seznanil z različnimi hidrološkimi procesi in mersko opremo na že vzpostavljeni in dobro opremljeni eksperimentalni raziskovalni ploskvi (porečju), kar omogoča takojšen začetek raziskovalnega dela in kvalitetne raziskave na mednarodnem nivoju (tudi v sklopu obstoječih mednarodnih raziskovalnih projektov Katedre za splošno hidrotehniko). Z lastnimi meritvami bo kandidat ugotavljal povezave in zakonitosti med posameznimi merjenimi spremenljivkami, kar mu bo omogočilo boljše razumevanje hidroloških procesov in njihovih vplivnih dejavnikov ter s tem kvalitetnejšo izdelavo hidroloških, vodno-bilančnih ali različnih statističnih modelov. Tema doktorske naloge bo predvidoma usmerjena v področje pretezanja padavin in s tem povezanimi procesi, kot so npr. evapotranspiracija, odtok, erozija. Od kandidata se pričakuje magistrska izobrazba s področja inženirskih znanosti (npr. vodarstvo, (okoljsko) gradbeništvo, gozdarstvo, inženirska geologija) ali naravoslovja (npr. uporabna fizika). Predviden je vpis na podiplomski študijski program Grajeno okolje ali Varstvo okolja. Prednost pri izbiri bodo imeli kandidati s poglobljenim znanjem s širšega področja hidrologije in željo po izvajanju eksperimentalnega dela (terensko delo na obstoječi eksperimentalni ploskvi/porečju) ter razvoju naprednih modelov in statističnih analiz merjenih hidroloških in meteoroloških spremenljivk. Prednost bodo imeli tudi kandidati s predznanjem programskega jezika R (ali podobnih jezikov). MR mora biti samoiniciativen in imeti sposobnost za samostojno raziskovalno delo. Nujno je dobro pisno in bralno znanje angleškega jezika in zanimanje za raziskovalno delo. MR bo deloval pod mentorstvom izkušenih raziskovalcev in hkrati v sodelovanju z drugimi mladimi raziskovalnimi sodelavci v spodbudnem raziskovalnem okolju.

eng: The Young Researcher (hereafter MR) will work in a research area within the established research programme P2-0180 Water Science and Technology, and Geotechnical Engineering: Tools and Methods for Process Analyses and Simulations, and Development of Technologies. The programme covers engineering (technical) and natural science topics related to water and water management. In the framework of PhD thesis and postgraduate studies, MR will actively participate in international and national research and professional projects of the Chair of Hydrology and Hydraulic Engineering at the Faculty of Civil and Geodetic Engineering, University of Ljubljana, and in the activities of the UNESCO Chair on Water-related Disaster Risk Reduction, University of Ljubljana (www.unesco-floods.eu).

The PhD thesis will be focused on the study of hydrological processes in the natural environment and on the solution of engineering problems in the broader field of hydrology, in agreement with the MR, and according to the candidate's background and preferences. The MR will carry out his/her own measurements of various meteorological and hydrological variables and thus become familiar with various hydrological processes and measurement equipment on an already established and well-equipped experimental research plot (catchment), which allows an immediate start of research work and high quality research at international level (also in the framework of existing international research projects of the Chair of Hydrology and Hydraulic Engineering). The candidate will use his/her own measurements to establish relationships and connections between individual

measured variables, which will enable him/her to better understand hydrological processes and their influencing factors, and thus to produce hydrological, water balance or various statistical models of higher quality. The topic of the PhD thesis is expected to focus on rainfall interception and related processes, e.g. evapotranspiration, runoff, erosion.

The candidate is expected to have a Master's degree in an engineering science (e.g. water engineering, civil (environmental) engineering, forestry, engineering geology) or a natural science (e.g. applied physics). Enrolment in the 3rd cycle study programmes Built Environment or Environmental Protection is foreseen. Preference will be given to candidates with an in-depth knowledge in the wider field of hydrology and a desire to carry out experimental work (field work on an existing experimental plot/catchment) and to develop advanced models and statistical analyses of measured hydrological and meteorological variables. Preference will be given also to candidates with previous experience in the R programming language (or similar languages). The MR must be self-initiative and able to work independently in research. Good writing and reading skills in English and an interest in research are essential. The MR will work under the supervision of experienced researchers while collaborating with other young researchers in a stimulating research environment.