Kratek opis usposabljanja mladega raziskovalca (*Short description of the Young Researcher's training)*

1. Raziskovalna organizacija (*Research organisation)*:

Univerza v Ljubljani, Fakulteta za gradbeništvo in geodezijo

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

Goran Turk, goran.turk@fgg.uni-lj.si

3. Šifra in naziv raziskovalnega področja (*Research field*):

2.01 Gradbeništvo

4. Kratek opis usposabljanja mladega raziskovalca (*Short description of the Young Researcher's training)*:

Navedite tudi morebitne druge zahteve, vezane na usposabljanje mladega raziskovalca (npr. znanje angleškega jezika, izkušnje z laboratorijskim delom, potrebne licence za usposabljanje…).

slo: Mladi raziskovalec bo delal na področju lesenih konstrukcij, bolj natančno razvrščanja lesenih konstrukcijskih elementov po trdnosti. Čeprav bi razvrščanje lesa po trdnosti morala biti osnovna in ustaljena inženirska praksa, zaradi zahtevnosti problematike to še vedno ni povsem rešen problem. Trdnost lesa lahko z neporušnimi metodami le ocenimo, določimo pa ga lahko le s porušitvijo. Ker so povezave med rezultati neporušnih metod in trdnostjo relativno šibke, napredek na tem področju vidimo v razvoju novih neporušnih metod oziroma kombinacijo obstoječih ter z razvojem ustrezne statistične obravnave podatkov. Izkazalo se je, da pri nekaterih vrstah lesa standardni postopki ne zagotavljajo ustrezne učinkovitosti in pravilnosti razvrščanja, zato bo del raziskave šel tudi v smeri razvoja novih postopkov razvrščanja, ki bodo temeljili na dejanskih meritvah in nekaterih naprednih metodah (napredne statistične metode, metode umetne inteligence). Naslednji korak v raziskavah je analiza konstrukcijskih elementov, ki jih izdelujemo iz lesa, najpogosteje so to lepljeni leseni nosilci. Povezave med lastnostmi posameznih desk in lastnostmi takih elementov ni preprosto določiti in so zato zanimivo področje raziskave. Aktivnosti bodo torej obsegale tako terensko in laboratorijsko delo, kot tudi statistično obdelavo in numerično analizo.

eng: Work of the young researcher will be focused on the area of timber constructions, specifically on strength grading of timber structural elements. Although timber strength grading should be well implemented in practice of wood production, due to complexity of the problem this is not the case in reality. Using non-destructive testing methods, timber strength can be estimated whereas exact strength can be obtained only by destructive testing. Correlations between non-destructive and destructive results are relatively low and from our perspective, the progress in this field can be achieved by development of new methods non-destructive testing or by combination of existing methods and by development of suitable statistical data analysis. It has been shown, that in case of specific wood species, standardized procedures do not provide sufficient efficiency and strength grading correctness. Therefore, the research will be oriented also in development of

new strength grading procedures that will be based on real measurements and some of the advanced methods (advanced statistical methods, artificial intelligence). The next step will be the analysis of timber structural elements, mostly used in form of glued laminated beams. The correlations between properties of the laminations and properties of the final product cannot be easily determined and therefore this is still an interesting research field. The activities will include fieldwork and laboratory work as well as statistical and numerical analysis.