

TFK-ohjelmasta 2021 tuetut hankkeet

TFK programme funded projects 2021

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| <p><b>Project title: Platform of Excellence for Complex System design: toward Double Doctor Degree between leading research schools of Finland and Russia</b></p> |   |
| <p><b>Coordinator</b></p> <p><b>Lappeenranta-Lahti University of Technology LUT</b></p> <p><b>Leonid Chechurin</b><br/>leonid.chechurin@lut.fi</p>                | <p>Science gradually reveals the interference of events and elements in our life. Changes in technology of lifestyles impact the environment, in turn the environment influence the economy, the economy can be affected by a number of endogenous and exogenous factors, including such a challenge as COVID-19 pandemic. But even every single innovation, e.g. magnetic bearing system, is a complex constellation of various physical phenomena, talking to each other, requiring evaluation of the performance of the orchestra as a whole plus the interaction of it with environment. The systems we deal with are becoming more and more complex and the need for and value of the right decision grow. The decisions are to be taken on the basis of quantitative prediction of consequences. The only tool to ensure predictability is mathematical modelling. The proposal adds to the excellence in mathematical modelling of complex systems developed as the result of cooperation of three best schools of two countries in the framework of double doctor degree (DDD).</p>                   |
| <p><b>Partners</b></p> <p>St.Petersburg State University, St.Petersburg<br/>Polytechnic University</p>  | <p>The objective of the project is to increase the quality of the highest qualification (doctoral) education by strengthening the international partnership of LUT university with international advanced schools and creating new platform of cooperation in research and education in the fundamental field of mathematical modeling and optimization. The project adds to the strength and reputation of LUT University in the demanding domain of model based decision making by cooperation with the best schools in the field, raising attractiveness of Finnish higher education institutions as partners and education providers.</p> <p>Two best in the field university partners from Russian Federation - St.Petersburg State University and Politechnic University with the closed geographical location will join the efforts in building the double doctor degree scheme thus creating the platform for sustainable, based on mathematical modelling, science with application in many social and industrial problems. The project mostly supports mobility of early stage researchers. The</p> |

rest is supervisors short time visits, their teaching and organisational efforts and minor technical costs.

The countable results are the formal and technical agreement on DDD between the partners, at least 4 joint PhD degrees, at least 10 high level (JUFO2..3) scientific publications and 2 joint digital courses of doctoral school level. The project will provide the methodological support for many schools and industries in both countries by serving as the platform for mathematical modelling of complex systems.



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