Mathematics, Applied Physics, and Computations

Anton V. Kulchitsky, Ph.D.

Dr. Anton V. Kulchitsky is the CTO of Coupi, Inc. with a Ph.D. and Master's degree in Applied Mathematics and Mechanics from Lomonosov Moscow State University, Department of Mechanics and Mathematics, a leading Russian math school. He has over two decades of theoretical and applied research experience. Including having worked at the Geophysical Institute, Arctic Region Supercomputing Center, and Institute of Northern Engineering of University of Alaska Fairbanks.

The Coupi Polyphysica particle-based simulation model and discrete element method is a software product developed by Anton Kulchitsky and Jerry Johnson. It is used to simulate interactions between granular materials with natural and engineered objects to determine macro-scale processes that involve material failure, large-scale deformations, and bulk material handling. Dr. Kulchitsky with his colleagues conduct experiments, data analysis, model development and simulations, and solve difficult applied physical problems.

Dr. Kulchitsky is a researcher with a wide range of interests. His works are published in the Journal of Geophysical Research, Physics of Plasmas, Acta Astronautica, Journal of Terramechanics, Physics and Chemistry of the Earth and other scientific journals and conferences. He served as a member of conference technical committees and as a reviewer.

Dr. Kulchitsky has led research projects including projects related to NASA planned missions. He contributed to developing exploration vehicles for NASA missions to asteroids and comets. Dr. Kulchitsky received a NASA (Langley Research Center) Director's Group Award for the Asteroid Redirect Mission concept study. Dr. Kulchitsky leads Coupi's research and development team that continues to develop new methods in granular material research, effective computations, and computer graphics.

HISTORY

CTO | FOUNDER

Coupi, Inc., Fairbanks, AK

Providing unique consulting, simulation services and access to physics based Polyphysica particle dynamics CAE program, supporting customers by solving problems related to manufacturing, processing, engineering, and optimization.

RESEARCH ASSOCIATE PROFESSOR

Institute of Northern Engineering, University of Alaska Fairbanks

Conducting research on granular media, space mission engineering, sea ice, and developing discrete element method.

RESEARCH ASSISTANT PROFESSOR, POST DOC, and INVITED RESEARCHER at different institutions.

EDUCATION

Ph.D. – Appled Mathematics and Mechanics, Moscow State University, Russia.

M.S. – Applied Mathematics and mechanics, Moscow State University, Russia.

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