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GREYDIENT

Newsletter N°3

Network-wide event: Leibniz Uni. Hannover



In October the GREYDIENT project gathered in Hannover, Germany for its third Network-wide event. On the program: four days of trainings including interventions from M. Liebscher from SCALE CAE and H.Zimmermann from HDI insurance as well as a training in Julia programming. Those events are also the occasion for the PhD students to present their progress and discuss the common grounds of their research.

Dissemination: conference activities

GREYDIENT organized a dedicated mini-symposium during the ISMA/USD conference in Leuven, Belgium. Five ESRs presented their progress and published an associated paper. The articles are available for download bellow, make to sure to check them!

ISMA/USD - Leuven, Belgium:

- **Damien Bonnet-Eymard:**
Physics informed neural network as surrogate model to quantify the uncertainty of the elastic response of a



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Active learning in grey-box models for near-real-time online monitoring of dynamic processes.

- **Giada Colella:**
Transfer learning for metamodel construction to enable uncertainty quantifications in crash design based on scarce data availability.
- **Paolo Ascia:**
A finite element model of component solution space for early stage design uncertainties.
- **Panagiotis Gavallas:**
Response statistics of composite structures with stochastic material properties based on microstructure.



On the picture, left to right: Giada Colella, Matthias Faes, Augustin Persoons, Paolo Ascia, Miriam Dodt, Panagiotis Gavallas

Dissemination: First journal publications

Two of the GREYDIENT PhD students had their first journal paper published

First-passage probability estimation of high-dimensional nonlinear stochastic dynamic systems by a fractional moments-based mixture distribution approach

C. Ding, C. Dang, M. Valdebenito, M. Faes, M. Broggi, M. Beer

Journal: Mechanical Systems and Signal Processing, Volume 185, 15 February 2023, 109775

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The effect of random field parameter uncertainty on the response variability of composite structures

George Stefanou, Dimitrios Savvas, Panagiotis Gavallas, Iason Papaioannou

Journal: Composites Part C: Open Access, Volume 9, October 2022, 100324, 109775

Welcoming a new ESR!

Luo Yi has been recruited for the ESR position number 3 with Leibniz university Hannover. We are very glad to welcome her to the network!

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