Topic 4: Systems engineering

Session 4.1: Components, systems and materials

Article ID: 4.1.022

Otto, Christian; Geinitz, Veronika; Kletzin, Ulf; Reich, René:

FEM simulation of wire drawing

DOI: https://doi.org/10.22032/dbt.58892

Article ID: 4.1.064

Petrich, Martin; Weimann, Tom-Luis; Thein, Ludwig; Kletzin, Ulf:

Behaviour of FRP-sandwich structures for lightweight composite springs in static and cyclic torsional load cases

DOI: https://doi.org/10.22032/dbt.58893

Article ID: 4.1.069

Lavayen Farfan, Daniel; Yarasca Huanacune, Jorge;
Butenegro García, José Antonio; López Boada, María Jesús;
Rodríguez Hernández, Jorge Antonio:

On the bending collapse behavior of rectangular hollow steel shapes of various thicknesses

DOI: https://doi.org/10.22032/dbt.58891

Article ID: 4.1.091

Schleichert, Johannes; Kletzin, Ulf:

Relaxation behavior of (cylindrical) helical compression springs

DOI: https://doi.org/10.22032/dbt.58890

Session 4.2: Systems engineering for demand-oriented products

Article ID: 4.2.007

Lipšinić, Zvonimir; Pavković, Neven:

Integrating life cycle assessment in model-based systems engineering

DOI: https://doi.org/10.22032/dbt.58905

Article ID: 4.2.029

Li, Zirui; Faheem, Faizan; Husung, Stephan:

Systematic use of model-based solution patterns using the example of a load cell

DOI: https://doi.org/10.22032/dbt.58904

Article ID: 4.2.032

Faheem, Faizan; Li, Zirui; Husung, Stephan:

Analysis of potential errors in technical products by combining knowledge graphs with MBSE approach

DOI: https://doi.org/10.22032/dbt.58898

Article ID: 4.2.041

Blott, Josua; Buchholz, Christian:

Challenges of implementing MBSE in industry – a tool vendor experience

DOI: https://doi.org/10.22032/dbt.58895

Article ID: 4.2.044

Panusch, Felix; Brix, Torsten; Rienecker, Maik; Husung, Stephan:

Systematization of existing uncertainties in the context of product development in the automotive supply industry

DOI: https://doi.org/10.22032/dbt.59012

Article ID: 4.2.052

Grosse, Karl W.; Hirte, Uwe; Brix, Torsten; Einicke, Frank; Hoffmann, Frank; Husung, Stephan; Flüggen, Folker:

Hybrid teaching and learning environment in the context of virtual product development

DOI: https://doi.org/10.22032/dbt.58902

Article ID: 4.2.053

Steck, Marco; Husung, Stephan; Schmid, Christoph:

Methodical procedure for a surrogate model based fatigue calculation to support the design process of eBike drive units

DOI: https://doi.org/10.22032/dbt.58909

Article ID: 4.2.057

Gerbet, Daniel; Röbenack, Klaus:

On the observability of embedded polynomial dynamical systems

DOI: https://doi.org/10.22032/dbt.58901

Article ID: 4.2.059

Geibel, Fabian:

Digital twin in industrial applications - how model-based systems engineering (MBSE) and asset administration shell (AAS) complement each other

DOI: https://doi.org/10.22032/dbt.58900

Article ID: 4.2.066

Watty, Robert; Brix, Torsten; Hirte, Uwe; Husung, Stephan:

Building agile product design competences in student projects

DOI: https://doi.org/10.22032/dbt.58911

Article ID: 4.2.067

Martin, Alex; Weidinger, Felicia; Greinert, Matthias; Wagenmann, Steffen; Albers, Albert:

Enhancement of an MBSE-supported methodology for managing engineering changes using the example of a machine tool

DOI: https://doi.org/10.22032/dbt.58907

Article ID: 4.2.068

Fincke, Sabine; Maschotta, Ralph; Hsu, Yi-Chun; Röckl, Thomas; Roßbach, Clara-Sophie; Augustin, Lydia-Dorothea; Daubner, Lukas; Deupmann, Jan; Lehmann, Marius:

Competence oriented study in engineering education - examples from the practicing programme

DOI: https://doi.org/10.22032/dbt.58899

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Salazar Márquez, Marcio B.; Gabash, Aouss; Shardt, Yuri A. W.; Tafur, Julio C.:
Optimal design of a photovaltaic station using Markov and energy price modelling
DOI: https://doi.org/10.22032/dbt.58910

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Mandel, Constantin; Schwarz, Stefan; Brix, Torsten; Albers, Albert; Husung, Stephan:
Improving system of objectives maturity through systematic reuse of knowledge using ontology-based knowledge representations
DOI: https://doi.org/10.22032/dbt.58908

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Hartel, Simon; Faber, Christian:
Using geometric algebra to create differentiable models for optimizing camera-based optical metrology systems
DOI: https://doi.org/10.22032/dbt.58903

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Trentsios, Pascalis; Wolf, Mario; Gerhard, Detlef:
Towards a deep reinforcement learning integration into model-based systems engineering
DOI: https://doi.org/10.22032/dbt.58912

Article ID: 4.2.105
Albers, Albert; Hirschter, Tobias; Fahl, Joshua; Tröster, Peter M.; Rapp, Simon:
Understanding the variation of physical elements and their impact on properties and functions: a case study on roll stabilization systems
DOI: https://doi.org/10.22032/dbt.58894

Article ID: 4.2.123
Mahboob, Atif; Hussein, Omar; Willrodt, Lennart; Thanga Raj Ashok Raaj, Vinodh Raaj; Takim, Mehmet Berk; Spaans, Arjen; Hasib, Hassan; Birkenfeld, Klaas:
C.Pulse - an industrial demonstrator for a digital twin powered by MBSE for achieving digital continuity during the complete development process
DOI: https://doi.org/10.22032/dbt.58906

Article ID: 4.2.125
Brix, Torsten; Bücker, Silvie; Husung, Stephan:
Sustainability strategies and their influence on the product development of machine tools and special machines
DOI: https://doi.org/10.22032/dbt.58896

Session 4.3:   *Metallic and hybrid materials and simulation*

Article ID: 4.3.056
Glaser, Marcus; Matthes, Sebastian; Riegler, Sascha Sebastian; Hildebrand, Jörg; Bergmann, Jean Pierre; Schaaf, Peter; Gallino, Isabella:
Characterization of plastic-metal hybrid composites joined by means of reactive Al/Ni multilayers – evaluation of occurring thermal regime
DOI: https://doi.org/10.22032/dbt.58913

Article ID: 4.3.111

Tavares, Michel R. P. M.; Rolón, Daniel A.; Kober, Julian; Kühne, Stefan; Schroeter, Rolf Bertrand; Oberschmidt, Dirk:

Molecular dynamics simulation of gallium phosphide zincblende cutting mechanism

DOI: https://doi.org/10.22032/dbt.58915

Article ID: 4.3.143

Sprigrode, Toni; Gester, Andreas; Wagner, Guntram; Brückner-Foit, Angelika; Boudhraa, Boulbaba; Rienäcker, Adrian:

Improving weld quality with optimized bobbin tools: an innovative approach to friction stir welding of aluminium

DOI: https://doi.org/10.22032/dbt.58914