Port-Hamiltonian Systems on multidimensional spatial domains

Nathanael Skrepek

University of Wuppertal

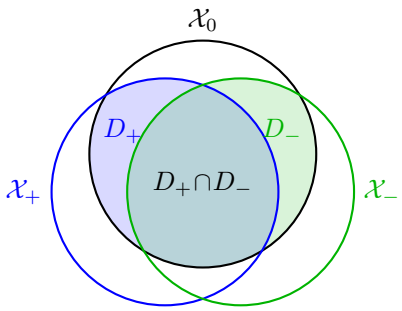

Illustration of quasi Gelfand triple

The port-Hamiltonian formulation has proven to be a powerful tool for the modeling and control of complex multiphysics systems. Among others such systems can by used to describe electromagnetic fields generated by an electric motor or the vibration of a wing of an airplane. So far there is no mathematical framework that justifies existence and uniqueness of solutions for 2-D and 3-D models. My research focuses on the mathematical justification for those port-Hamiltonian systems. The picture displays a new concept that helps to treat these systems.

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