

Boundary triples with quasi Gelfand triples

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We consider a class of linear port-Hamiltonian systems that contains the wave equation, Maxwell's equations, Kirchhoff-Love plate etc.. We show that there is a boundary triple associated to the corresponding spatial differential operator. The integration by part formula already suggests a possible choice for the boundary operators, however these operators cannot be extended to the maximal domain of the differential operator. Also the more general concept of quasi boundary triples is not suitable for this setting. In order to overcome these difficulties we introduce the notion of quasi Gelfand triple, which allows us to extend the boundary operators by changing the boundary space, without losing all of the structure of the original boundary space.