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Lagrange multipliers are used to impose constraints to the solution of a partial differential equation in a variational way. Relevant examples are the continuity across interfaces, or conservation of mass and volumes. It is well known that the resulting system represents a saddle point problem and its discretization requires special care.

Indeed, the choice of discretization spaces for multipliers depend upon the discretization of the primal variables and it is key to stability. I will discuss the choices that are possible when the primal variables are described by splines or NURBS in various contexts. I will introduce mortaring techniques to impose continuity across non-matching spline surfaces and their applications to contact mechanics, as well as the numerical treatment of (quasi-)incompressibility and its application to large deformation problems.

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