

GRAPH TECHNIQUES FOR HIGH ORDER DISCRETE POTENTIALS

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ABSTRACT. In applied computations the need often arises to define, for example, a discrete field with assigned curl or to represent a div-free field in a given discrete space. In the low degree case this need can be fulfilled by involving tree and co-tree techniques (see, e.g., [1] or [2]). The aim of the talk is to give an overview of some extensions of this approach to the frame of high order Whitney finite elements. Two different kinds of degrees of freedom are considered: the classical moments as in [4] or the weights on small simplices (see [3]) discussed in [5].

Keywords: high order Whitney forms, spanning tree, oriented graph, finite element potentials.

Mathematics Subject Classifications (2010): 78M10, 65M60, 05C85.

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