

## **Nodal Finite Element Methods**

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We construct 2D and 3D finite element de Rham sequences of arbitrary polynomial degrees with extra smoothness.

Some of these elements have nodal degrees of freedom (DoFs) and can be considered as generalisations of scalar Hermite and Lagrange elements. Using the nodal values, the number of global degrees of freedom is reduced compared with the classical  $N^{\text{ed}}$  and Brezzi-Douglas-Marini (BDM) finite elements, and the basis functions are more canonical and easier to construct.