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**Generic approach for construction of high-order discrete  
differential operators for OcTree structures**

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In this study, a generic framework for high-order OcTree discretization is proposed. OcTree discretization offers unique advantages in the solution of large-scale problems; however, its unstructured grid nature requires special means for the construction of discrete operators. As opposed to the conventional approach in which operators are prescribed and analysis is practiced for error assessment, here the discretization operators are directly derived from the analysis. This is conducted through a two stage process in which the support for each component of the discrete operator is first queried and then, interpolation conditions yield local systems which are solved to provide the desired irregular difference templates. We show that this approach allows for the accurate and effective solution of large-scale systems evolving from Maxwells equations. We further explore the usage of these operators as a complementary measure for local refinement.