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## Edge-Corner interaction inside polyhedral singularities

Elliptic boundary value problems in polyhedral domains have singular solutions along their edges and at their corners. The two end points of each edge are corners of the domain. Each corner is associated to the cone with which the domain coincides at its neighborhood. This cone itself possesses edges.

These two interactions have their specific effects:

- (i) The edge coefficients have special behaviors at the end points of the edge;
- (ii) The spherical part of corner singularities has sub-singularities.

These two interactions will be clarified by the introduction and the comparison of two different expansions at a polyhedral corner [4, 5].

As examples, we will consider the Laplace operator, electric potential transmission problems, the Maxwell system [1]. We will mention the particular and important case of a domain defined by the three-dimensional region exterior to a plane polygonal surface (crack or screen problems) [2, 3].

## References

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