



FIG. 3.4. Accelerated compression using proxy surfaces. The field within a region  $B$  due to a distribution of exterior sources (left) can be decomposed into neighboring and well-separated contributions. By representing the latter via a proxy surface  $\Gamma$  (center), the matrix dimension to compress against for the block corresponding to  $B$  (right) can be reduced to the number of neighboring points plus a constant set of points on  $\Gamma$ , regardless of how many points lie beyond  $\Gamma$ .