Bandwidth of Three Dimensional Meshes

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In 1995, the bandwidth of triangulated triangles $T_m$ were found by Hockberg et al. Based on the proof of Hockberg, Lam et al obtained the bandwidth of convex triangulated meshes $T_{i,m,n}$ in 1997. In this paper, we shall consider a three dimensional analogue of $T_m$. Let $TT_m$ be a simple graph whose vertices are the triples $(x, y, z)$ of nonnegative integers such that $x, y, z \leq m - 1$, with edges joining any two triples if they agree in one or two coordinates and differ by 1 in the remaining coordinate(s). We shall obtain an upper bound for the bandwidth of $TT_m$ and show that this upper bound of the bandwidth is irreducible on the "level-by-level" numbering.