# Degree/Diameter Problem in Host Graphs

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The degree diameter problem involves finding the largest graph (in terms of the number of vertices) subject to constraints on the degree and the diameter of the graph. Beyond the degree constraint there is no restriction on the number of edges (apart from keeping the graph simple) so the resulting graph may be thought of as being embedded in the complete graph. In a generalization of this problem, the graph is considered to be embedded in some connected host graph. This problem was posed by Dekker et al. in [1]. M. Miller et al. in [2] investigated the largest subgraphs in the mesh. In this talk, known results for triangular and honeycomb grids will be sumarized. Some partial results for diamond structure and some improvements for 3-dimensional mesh will be also mentioned.

# References

[1] A. Dekker, H. Perez-Roses, G. Pineda-Villavicencio, and P. Watters, *The Maximum Degree/Diameter Bounded Subgraph and its Applications*,. J. Math. Model. Algorithms 11/3 (2012), 249-268.

[2] M. Miller, H. Perez-Roses and J. Ryan, *The Bounded Degree/Diameter Maximum Subgraph Problem in the Mesh*, Discrete Applied Math 160/12 (2012), 1782-1790.

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