

**Fiala, Jiří; Gavenčiak, Tomáš; Knop, Dušan; Koutecký, Martin; Kratochvíl, Jan**  
**Parameterized complexity of distance labeling and uniform channel assignment problems.**  
(English) [Zbl 1395.05143](#)  
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Summary: We rephrase the distance labeling problem as a specific uniform variant of the channel assignment problem and show that the latter one is fixed parameter tractable when parameterized by the neighborhood diversity together with the largest weight. Consequently, the distance labeling problem is FPT when parameterized by the neighborhood diversity, the maximum  $p_i$  and  $k$ . This is indeed a more general answer to an open question of *J. Fiala et al.* [*Lect. Notes Comput. Sci.* 5532, 221–230 (2009; [Zbl 1241.68071](#))].

Finally, we show that the uniform variant of the channel assignment problem becomes NP-complete when generalized to graphs of bounded clique width.

**MSC:**

- [05C78](#) Graph labelling (graceful graphs, bandwidth, etc.)
- [05C82](#) Small world graphs, complex networks (graph-theoretic aspects)
- [05C12](#) Distance in graphs
- [90B80](#) Discrete location and assignment

Cited in 1 Document

**Keywords:**

distance labeling; channel assignment; bounded cliquewidth; bounded vertex cover; fixed parameter tractability

**Full Text:** [DOI](#)

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