



**New analytical benchmarks for topology optimization and their implications. Part I: bi-symmetric trusses with two point loads between supports, Tomasz Sokół · George I. N. Rozvany**

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Extending some results by Sokół and Lewiński (*Struct Multidisc Optim* 42:835–853, 2010), the optimal topology of bi-symmetric trusses with two symmetrically placed pointloads is determined analytically, and verified by highly accurate numerical calculations. It is rather remarkable that Michell's best-known classical solution had to wait over hundred years for its generalization from one to two point loads. Some implications of these solutions, including properties of so-called **O**-regions, are also discussed.