Divisible Design Graphs

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Divisible design graphs are graphs whose adjacency matrix can also be interpreted as the incidence matrix of a divisible design. They are a generalization of (v, k, λ) graphs. The concept is due to Hadi Kharaghani (private communication). We will present a start for some theory of these structures. This includes constructions, characterizations and necessary conditions for existence. (Joint work with Maaike Meulenberg.)