On k-factorizations of complete uniform hypergraphs of small order

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A *k-factorization* of the complete t-uniform hypergraph $K_v^{(t)}$ is an H-decomposition of $K_v^{(t)}$ where H is a k-regular spanning subgraph of $K_v^{(t)}$. In the first part of this talk, we give a quick summary of some of the known results on k-factorizations of complete graphs. We then investigate which 2-regular spanning subhypergraphs of $K_v^{(3)}$ factorize $K_v^{(3)}$ or $K_v^{(3)} - I$, where I is a 1-factor and $v \leq 18$. We also investigate 3-factorizations of $K_v^{(3)}$ and $K_v^{(3)} - I$ for $v \leq 10$.
This is joint-work with Peter Adams, Peter Florido, and William Turner.

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