Ore-type Conditions for the Existence of Even $[a, b]$-factor in Graphs

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Let $a < b$ be positive even integers. An even $[a, b]$-factor of a graph $G$ is a spanning subgraph $H$ such that for every vertex $v \in V(G)$, $d_H(v)$ is even and $a \leq d_H(v) \leq b$. Let $\kappa(G)$ be the minimum size of a vertex set $S$ such that $G - S$ is disconnected or one vertex, and let $\sigma_2(G) = \min_{uv \in E(G)}(d(u) + d(v))$. In this talk, we prove that for even positive integers $a$ and $b$ with $4 \leq a < b$, if $G$ is an $n$-vertex graph such that $n \geq (a + b)(\frac{a+3}{3})$, $\kappa(G) \geq a$, and $\sigma_2(G) \geq \frac{2an}{a+b}$, then $G$ contains an even $[a, b]$-factor.

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