On strict-semi-bound graphs of posets

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(joint work with Kenjiro Ogawa and Satoshi Tagusari)

For a poset $P = (V(P), \leq_P)$, the *strict-semi-bound graph* of P is the graph $\mathrm{sSB}(P)$ on $V(\mathrm{sSB}(P)) = V(P)$ for which vertices u and v of $\mathrm{sSB}(P)$ are adjacent if and only if $u \neq v$ and there exists an element $x \in V(P)$ distinct from u and v such that $x \leq_P u, v$ or $u, v \leq_P x$. We obtain that a poset P is connected if and only if the induced subgraph $\langle \mathrm{Max}(P) \rangle_{\mathrm{sSB}(P)}$ is connected. We also characterize posets whose strict-semi-bound graphs are triangle-free.