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Abstract
This thesis uses open source software SPLAT to simulate 45 nm node with immersion optical lithography, and discusses its process window under different OAI and rule-based optical proximity corrections for some typical patterns.
Without OAI, the DOF is 61 nm and the exposure latitude is 17.1% for the 10% line width tolerance. The best process window is with 10% OAI, its DOF is 65 nm and its exposure latitude is 17.1%. To achieve automatic OPC, we simulate some typical patterns, calculate their distortions, discuss the minimum line space and provide the corresponding optical proximity correction rules.
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