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## **Speckle suppression by splitting and delaying short FEL pulses**

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In the application of FELs for the EUV lithography, an important question is how the coherence of the FEL light affects the imaging of the mask. As is well known, coherent light produces speckles which, in lithographic process, can distort the mask image. An effective way to suppress the speckles was pointed out in Ref. [1]. It is based on splitting the FEL beam into multiple beamlets in a way that the light from different beamlets does not overlap in time due to the short duration of the FEL pulses. In this work, using a simple model, we calculate the speckle suppression as a function of the beamlets overlay, and mathematically confirm the predictions of Ref. [1].

### **Footnotes**

1. C. Anderson. Presentation at the SPIE conference, San-Jose, CA, February, 2024.

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