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Isolated Terawatt Attosecond X-ray Free Electron Laser

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Micro-bunching instability (MBI) is considered as a critical obstacle for the realization of the isolated terawatt attosecond XFEL. To make high a peak current, the distribution of the electron beam in the phase space should be uniform. The micro-bunching instability will twist the distribution which results in very low peak current value. The effect by MBI has been investigated and a proposal is provided to overcome the obstacle. This will pave a way to the realization of a terwatt level, isolated attosecond pulse at X-ray region.

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