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## Generalized longitudinal strong focusing in a storage ring for coherent EUV radiation

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A laser-driven storage ring is proposed to generate steady-state, nanometer-long electron bunches. A ring of this type can produce coherent EUV radiation with greatly enhanced power and photon flux, benefiting a wide range of scientific and industrial communities, including condensed matter physics and computer chip fabrication. The underlying mechanism is called generalized longitudinal strong focusing (GLSF), which invokes precise transverse-longitudinal coupling dynamics and lowers the required laser power significantly by exploiting the ultrasmall vertical beam emittance. A practical instance indicates that kW-level coherent EUV radiation is attainable in a GLSF ring with a modulation laser power as low as 1 MW, allowing for continuous-wave operation of up-to-date optical cavities.

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## Footnotes

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