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Influence of Disk Aberrations on High-Power Thin-Disk Laser Cavities

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We demonstrate a spatially-resolved approach to simulating thin-disk lasers. The model supports exact phase profiles for cavity elements, allowing the impact of experimentally measured non-radially-symmetric aberrations of the thin-disk to be studied. Predicted stability zones, distorted fundamental mode and higher-order mode excitation are in good qualitative agreement with high-power experiments.

Primary authors: SEIDEL, Moritz (Institute for Quantum Electronics, ETH Zurich, Zurich, Switzerland); LANG, Lukas (Institute for Quantum Electronics, ETH Zurich, Zurich, Switzerland); PHILLIPS, Christopher R. (Institute for Quantum Electronics, ETH Zurich, Zurich, Switzerland); KELLER, Ursula (Institute for Quantum Electronics, ETH Zurich, Zurich, Switzerland)

Presenter: SEIDEL, Moritz (Institute for Quantum Electronics, ETH Zurich, Zurich, Switzerland)

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