

## **Symmetry accounting helps solve the Lasing Eigenvalue Problems for optical microcavities**

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### **Abstract**

© 2016 IEEE. The microcavity modes are considered accurately using the linear electromagnetic formalism of the Lasing Eigenvalue Problem (LEP) with exact boundary and radiation conditions. We reduce the original problem to a nonlinear eigenvalue problem for the system of Muller boundary integral equations and build a numerical method accounting symmetry of solutions. Symmetry accounting helps split solutions on classes, which contributes to the stability of calculations and reduces the dimension of the nonlinear spectral algebraic problem.

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