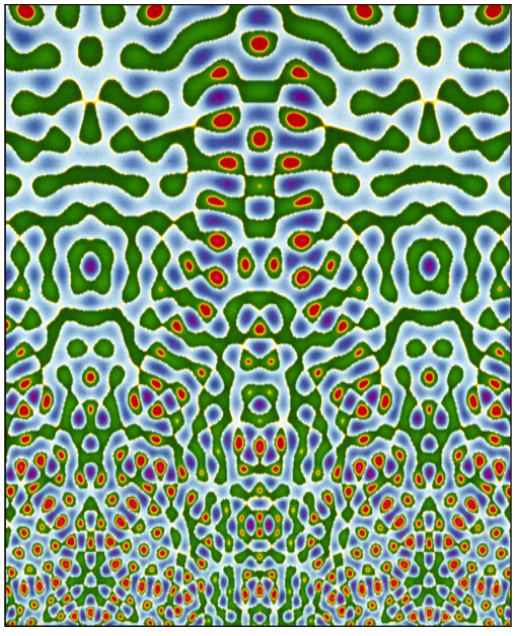
About the Cover

Atle Selberg and automorphic forms

The cover shows a framed image of a Maass form for SL(2,$\mathbb{Z}$) hanging on the wall of the office of Atle Selberg at the Institute for Advanced Study. Dennis Hejhal and Peter Sarnak, contributors to the Selberg memorial article in this issue, write:

"The theory of Eisenstein series lies at the center of the modern theory of automorphic forms. They are a fundamental tool in the theory, and understanding them has uncovered many of the deeper truths in the subject. Selberg's very original investigation of their meromorphic continuation marked the beginning of the modern theory. In the case of the classical modular group, their closer analysis—combined with the trace formula—enabled Selberg to establish the existence of the simplest building blocks of the theory, viz., nonholomorphic cusp forms. Known also as 'Maass waveforms', such forms are, in the present setting, simply nonconstant eigenfunctions of the non-Euclidean Laplacian on the familiar triangular-shaped fundamental domain for the modular group. The picture on the cover is a color-coded topography plot of such a cusp form having eigenvalue approximately 15,700. It was computed numerically by Hejhal in 1992, and was one of the few decorations that Selberg placed on the walls in his office. (Very similar patterns are found with Eisenstein series.)"

—Bill Casselman, Graphics Editor
(notices-covers@ams.org)



Photograph by Bill Casselman.