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ABSTRACT

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Making light of mathematics

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Many 'mathematical phenomena' find application and sometimes spectacular physical illustration in the physics of light. Concepts such as fractals, catastrophe theory, knots, infinity, zero, and even when $1+1$ fails to equal 2, are needed to understand rainbows, twinkling starlight, sparkling seas, oriental magic mirrors, and simple observations on interference, polarization and focusing. The lecture is nontechnical but intellectual, and strongly visual.