

Title: The Berkeley Surface Emitting Laser (BerkSEL)

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Abstract- The scaling of lasers and in-particular of surface emitting lasers is a multi-decade long question that has been investigated since the invention of lasers. It is an important question with numerous applications. In this talk, I will discuss a series of lasers that we have developed that overcome multi-decades roadblocks in lasers-physics. I will first discuss our invention of topological lasers: integrable non-reciprocal coherent light sources as well as compact bound state in continuum sources. In the second part of the talk, I will discuss a scalable aperture that solves the optics challenge of single apertures scaling. I will discuss the physics of the invention that I named Berkeley Surface Emitting Laser (BerkSEL).