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Andrei Okounkov*, Fine Hall, Washington Road, Princeton, NJ 08544. *Limit shapes, real and imagined, I. Random surfaces around us.*

We are surrounded by limit shapes — macroscopic forms produced from microscopic particles by microscopic laws. One can learn about shape formation phenomena from very simple random surface models which can be analyzed exactly. Surprisingly, the same random surface models reappear in other areas of mathematics and physics.

In the first lecture, we will begin making our acquaintance with the limit shapes by looking at the simplest examples. (Received September 26, 2006)