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Necklace solitary waves on bounded domains

The critical power for collapse appears to place an upper bound on the amount of power that can be propagated by intense laser beams. In various applications, however, it is desirable exceed this limit and deliver more power. In this talk I will present new solitary waves of the two-dimensional nonlinear Schrodinger equation on bounded domains, which have a « necklace » structure. I will consider their structure, stability, and how to compute them. In particular, I will show that these solitary waves can stably propagate more than the critical power for collapse.