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Tvrtko Tadic* (tvrtko@math.hr), Microsoft Corporation, One Microsoft Way, (CCP Bellevue 4337), Redmond, WA 98052. *Can one make a laser out of cardboard?*

We consider two dimensional and higher dimensional semi-infinite tubes made of "Lambertian" material, so that the distribution of the direction of a reflected light ray has the density proportional to the cosine of the angle with the normal vector. If the light source is far away from the opening of the tube then the exiting rays are (approximately) collimated in two dimensions but are not collimated in higher dimensions. Using the properties of the arccosine distribution we are able to analyze the tail of the movement in the direction of the higher dimensional tube and to obtain asymptotic results on the exiting properties for these high dimensions. Further, an observer looking into the higher dimensional tube will see "infinitely bright" spot at the center of vision. In other words, in high dimensions, the light brightness grows to infinity near the center as the light source moves away. Joint work with Krzysztof Burdzy. (Received July 06, 2018)