TECHNISCHE UNIVERSITÄT CHEMNITZ

PHYSIKALISCHES KOLLOQUIUM

Mittwoch, den 26.01.2011, um **15:30 Uhr**

Ort: Reichenhainer Str. 90; Neues Hörsaalgebäude, Raum: 2/N013

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Snake Infrared Vision

Several, though not all, snake species possess infrared-radiation detectors that enable them to “see” heat. This capability is advantageous in that it allows them to hunt warm-blooded prey at night when ordinary vision is useless. The detection system consists of one or more large cavities called pit organs at each side of the head. Infrared radiation entering a cavity strikes a heat-sensitive membrane located within. The opening of the cavity must be relatively large, since membrane receptors only register a thermal energy influx above a certain threshold. To obtain a sharp image, on the other hand, the opening should be as small as possible, as in a pinhole camera.

In fact, the pit holes of the snake are so large that the image on the heat-detecting membrane resembles a fuzzy blob rather than a sharp picture of the snake’s thermal environment. Without a small aperture, a snake’s “pithole” camera cannot, and does not, make a good imaging device. The key question then becomes: Given that infrared radiation lenses do not exist, how can a snake still use the low-quality image from the pit organs to accurately guide its movements and strike its prey?

Alle Zuhörer sind ab 15:15 Uhr zum Kaffee vor dem Hörsaal eingeladen.

Informationen zum Vortrag erteilt Prof. Dr. Günter Radons, Tel. 0371/531-33205