Physics Colloquium
Extreme Light Pulses: The Texas Petawatt Laser

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Abstract:
The development of chirped pulse amplification led to a rapid increase in the peak power attainable with high energy ultrashort pulse lasers. This technology has allowed routine construction of table-top scale lasers with peak powers of many TW, culminated in the demonstration of a PW peak power laser in the late 1990s. Applications arising from the high intensities accessible with this high power lasers (extending up to $10^{21} \text{ W/cm}^2$) are among the most exciting frontiers of modern physics. The Texas Petawatt laser has a novel design, which uses a hybrid combination of technologies permitting high energy laser pulses with duration substantially shorter than the first PW laser. This approach could lead to exawatt peak power lasers in the near future.

Friday, March 27\textsuperscript{th}, 2009
4:00-5:00 pm

Goudsmit Conference Room, LP 208