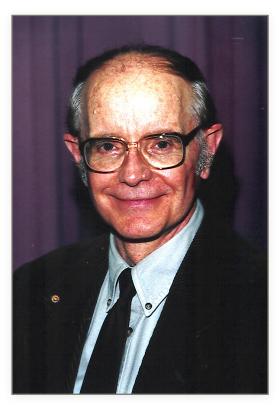
## Seminar Friday, June 5, at 15<sup>00</sup> Institute of Physics, Blue Conference Hall



## Remote Detection via Quantum Coherence

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## **ABSTRACT**

There is nothing so practical as a good theory. As a case in point, the compelling need for standoff detection of hazardous gases and vapor indicators of explosives has motivated the development of remotely pumped, scheme(s) which produce radiation in the backward direction [1,2]. Moving

from conceptualization to theoretical analysis and experimental verification, we demonstrate that high gain can be achieved in air. Backward air lasing provides possibilities for remote detection [3] as will be discussed.

<sup>[1]</sup> A. Dogariu, M. Scully, et al., "High-Gain Backward Lasing in Air", Science, 331(6016), 442–445 (2011).

<sup>[2]</sup> A. Svidzinsky, L. Yuan, and M. Scully, "Transient lasing without inversion", New J. Phys., 15, 053044 (2013).

<sup>[3]</sup> A. Zheltikov, et al., "Coherent Raman Umklappscattering", Opt. Express, 20, 18784 (2012); LPL 8, 736–741 (2011).