



LBL Nuclear Physics Forum

Friday, March 9, 2018 @ 11:00 am

Building 88 Lounge (2nd floor)

Cookies and coffee available from 10:45am

Prof. Calvin Johnson

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“Beyond the Brink-Axel Hypothesis”

The first and simplest picture of nuclei is of liquid drops that can shake, roll, and resonate, and indeed so-called 'giant' resonances of many persuasions are known. But aside from their simple existence, are resonances neat and orderly, or capricious and random? A long time ago Brink and Axel postulated that electric dipole resonances off excited states should look similar to those starting from the ground state. Today no one would blindly subscribe to the Brink-Axel hypothesis, except that in the absence of other data it's the simplest and often only possible assumption. So is the Brink-Axel hypothesis mostly right, mostly wrong, or something else entirely? And how much does it depend upon the kind of transition? I will show, using basic mathematical arguments and detailed calculations, that, viewed through the right lens, the Brink-Axel hypothesis can be modified in a straightforward and rigorous way.



Nuclear Science Division