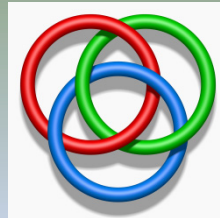




American Nuclear Society Northern California Section

Dinner Meeting Announcement

The Halo at the Center of the Atom



Thursday, January 16, 2014

Dr. Ian J. Thompson

Nuclear Physicist, Lawrence Livermore National Laboratory

In order to understand how all the chemical elements are produced, we have to understand not just the elements we find on earth now, but also those varieties of elements that appeared fleetingly in stellar explosions. In the last 20 years, physicists have been able to recreate many of these short-lived varieties, and have discovered many new features not seen in their long-lived cousins. Most stable nuclei have approximately equal number of protons and neutrons (the protons have a positive charge, while the neutrons form a neutral glue holding the nucleus together). Now, however, we discover that there was once, and are now again in the laboratory, some exotic nuclear varieties with many more neutrons than protons. Sometimes these extra neutrons form a large halo around the protons, in the nucleus at the center of the atom. We have discovered that the halo is much larger in size than the range of the force which contains it. I will look especially at some this and other strange properties of nuclear halos: how we need to use the wave features of modern quantum physics to see how they can even exist at all, how we measure their properties, and what possible use such atoms may have again.

ANS members and non-members welcome.

To make reservations visit:

<http://local.ans.org/norcal/meetings>

or contact:

Alireza Moharrer,

ANS NORCAL Program Committee

Email: moharrer@gmail.com

Dinner: 6:30 p.m.

Program: 7:30 p.m.

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