Half Day IoP Meeting: Neutrinoless Double Beta Decay

Report of Contributions

Contribution ID: **0** Type: **not specified**

Welcome

Wednesday 12 October 2011 13:00 (5 minutes)

Contribution ID: **1** Type: **not specified**

Neutrinos and DBD

Wednesday 12 October 2011 13:05 (40 minutes)

Presenter: LOPEZ-PAVON, Jacobo

Contribution ID: **2** Type: **not specified**

Beyond the Standard Model and DBD

Wednesday 12 October 2011 13:45 (40 minutes)

Presenter: HIRSCH, Martin

Contribution ID: **3** Type: **not specified**

DBD Experiments

Wednesday 12 October 2011 14:25 (40 minutes)

Presenter: RAMACHERS, Yorck

Contribution ID: **4** Type: **not specified**

Neutrino Mass Bounds from Astrophysics

Wednesday 12 October 2011 15:05 (25 minutes)

Presenter: LAHAV, Ofer

Contribution ID: **5** Type: **not specified**

Nuclear Matrix Element Calculations

Wednesday 12 October 2011 16:00 (40 minutes)

Presenter: RODIN, Vadim

Contribution ID: **6** Type: **not specified**

Experimental Input for Nuclear Matrix Elements

Wednesday 12 October 2011 16:40 (40 minutes)

If neutrinoless double beta decay were to be observed, its half life would provide a determination of the effective neutrino mass as long as the nuclear matrix element can be determined. These matrix elements are not directly sampled by any other physical process and their values, which are by necessity taken from theoretical calculations, are rather uncertain. However, various elements of these calculations can be benchmarked against measureable nuclear properties. Using the 76Ge⊠76Se system, we have determined the occupancy of protons and neutrons in the 'active orbitals'of the respective 0+ ground states, and the difference between them, thus characterising the ground-state wave functions. The Fermi surface was found to be more diffuse than previous calculations suggested. Pairing properties have also been studied to test the validity of the BCS approximation used in QRPA, one of the major theoretical approaches to calculating the matrix elements. We are continuing this programme by studies of the 130Te⊠130Xe and 100Mo⊠100Ru systems, where each presents a different experimental challenge. An overview of the programme and its impact will be discussed.

Presenter: KAY, Benjamin

Contribution ID: **7** Type: **not specified**

The NEMO and SuperNEMO Experiments

Wednesday 12 October 2011 18:10 (25 minutes)

Presenter: TORRE, Stefano

Contribution ID: **8** Type: **not specified**

The SNO+ Experiment

Wednesday 12 October 2011 17:45 (25 minutes)

Presenter: LEFEUVRE, Gwen

Contribution ID: **9** Type: **not specified**

The GERDA Experiment

Wednesday 12 October 2011 17:20 (25 minutes)

Presenter: ZUZEL, Grzegorz

Contribution ID: **10** Type: **not specified**

Adjourn

Wednesday 12 October 2011 18:35 (5 minutes)