Contribution ID: **175**   Type: **Oral Presentation**

Central stellar populations of brightest cluster galaxies

Thursday, 12 July 2012 16:20 (20 minutes)

Abstract content
   (Max 300 words)

We analyse the stellar populations of a sample of brightest cluster galaxies (BCGs), for which high signal-to-noise ratio, long-slit spectra were obtained on the Gemini telescopes, by fitting their spectra using the software package ULySS (with the Pegase.HR (P.HR) and the Vazdekis-Miles (V/M) models). We use full spectrum fitting, and fit each spectrum against a single stellar population (SSP) as well as composite stellar populations (CSPs). We find that the composite populations (CSPs) generally consist of 2 or 3 SSPs, and can be divided according to their ages: a young, intermediate and old component. Monte-Carlo simulations are used to assess the relevance of the solutions, and thereby aiding the selection of the most probable star formation histories (SFHs) of the BCGs. We also investigated whether any correlation could be found between the derived parameters and the internal properties of the galaxies and those of the host clusters, more specifically whether the presence of cooling flows (CFs) had any influence on the star formation (SF) activities in the clusters. We find, with the P.HR model in particular, that the best fit is given by a composite stellar population for a non-negligible fraction of BCGs, indicating that these BCGs have a more complex evolution as first thought. We also find that the majority of the galaxy's SFHs can be represented by 1 SSPs but some of the BCGs could be represented by CSPs. It followed that the young/intermediate aged BCGs (containing CFs) were located closer to the X-ray offset than the older BCGs containing CFs. This indicated that the young/intermediate BCGs tend to be found in clusters containing CFs, meaning that at least some of the SF, but not all the activities were due to the presence of these CFs.

Apply to be
 consider for a student
   award (Yes / No)?

Yes

Level for award
 (Hons, MSc,
   PhD)?

M.Sc

Main supervisor (name and email)
and his / her institution

Dr. S.I. Loubser
Ilani.Loubser@nwu.ac.za
North-West University

Would you like to <br> submit a short paper <br> for the Conference
 Proceedings (Yes / No)?

Yes

Primary author: Ms VILJOEN, Danièl (Student)

Co-author: Dr LOUBSER, Ilani (Supervisor)

Presenter: Ms VILJOEN, Danièl (Student)

Session Classification: Astrophysics

Track Classification: Track D1 - Astrophysics