# Did brightest cluster galaxies experience more than one star formation epoch?

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**Abstract.** We use the full spectrum fitting ability of *ULySS*, with the Pegase.HR stellar population model to fit the observed spectra of 40 brightest cluster galaxies in order to determine whether a single or a composite stellar population provided the most probable representation of the star formation history (SFH). We find that some galaxies in the sample have more complex SFHs.

Keywords. galaxies: evolution, galaxies: general - galaxies: stellar content.

#### 1. Introduction

Recent literature, i.e. Loubser (2009) refer to brightest cluster galaxies (BCGs) as the central, dominant galaxy in a cluster with a typical mass of  $\sim 10^{13} M_{\odot}$  (Katayama *et al.* 2003). It has been widely excepted that BCGs are dormant elliptical galaxies with a red photometric color, implying that old stellar populations are present. However, Liu, Mao & Meng (2012) have found that some BCGs have the presence of blue cores and UV excess which implies that star formation recently took place.

### 2. Results and Conclusions

We use the full spectrum fitting software package ULySS with the Pegase.HR stellar population model to fit this model against the observed spectra of 40 galaxies from Loubser (2009), to determine whether a simple or composite stellar population were a more probable representation of the star formation histories (SFHs). We found that 22 galaxies could be represented by a single stellar population (SSP) and the remaining 18 by composite stellar populations.

Our findings suggest that although 55% of the sample could be represented by an SSP, the remaining 18 galaxies experienced more than one star formation event. Hence, some BCGs have a more complex SFH than first assumed.

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#### References

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