

# Astrophysics Seminar Series

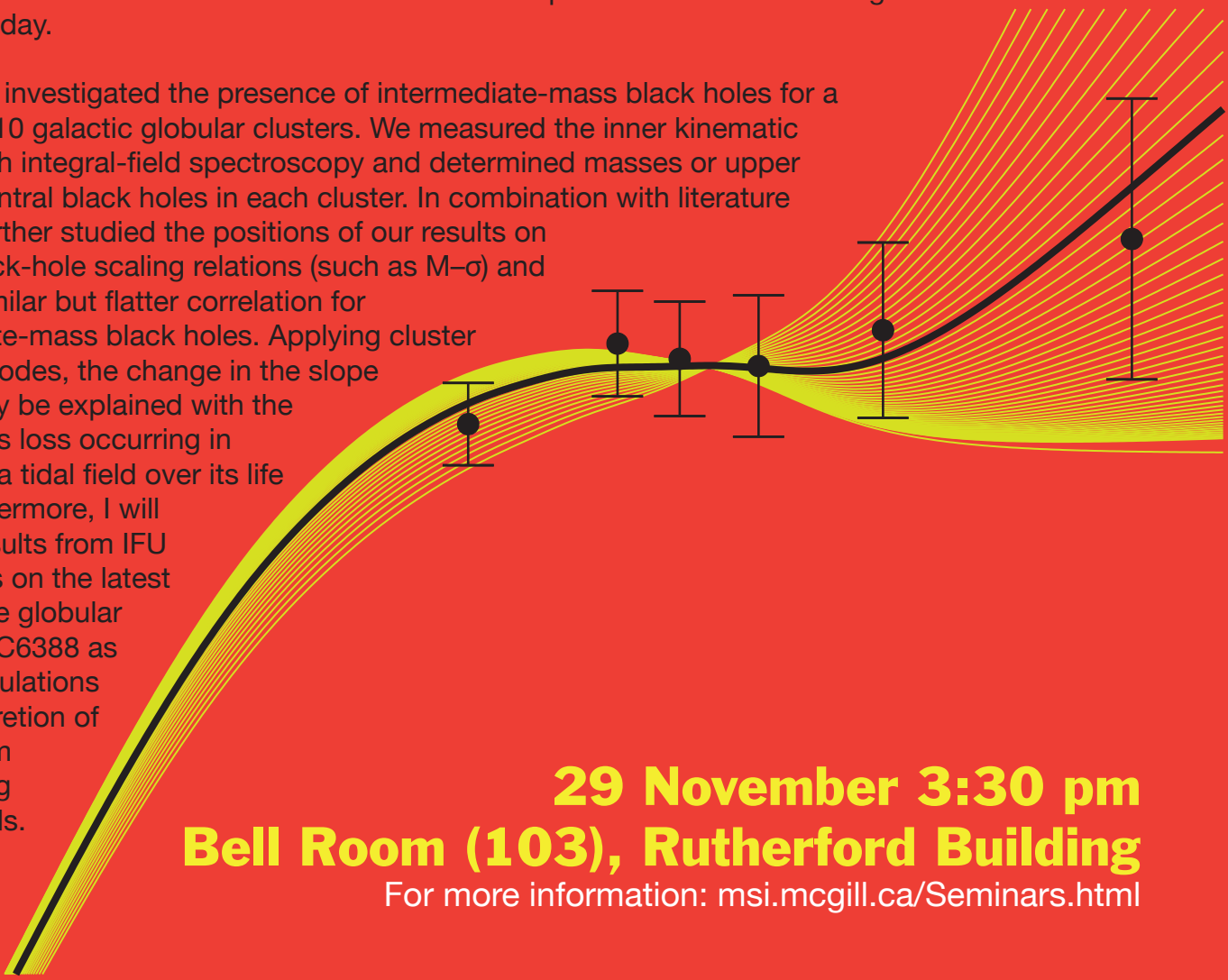
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## Intermediate-mass black holes in globular clusters Observations and Simulations

The study of intermediate-mass black holes is a young and promising field of research. If they exist, they could explain the rapid growth of supermassive black holes by acting as seeds in the early stage of galaxy formation. Formed by runaway collisions of massive stars in young and dense stellar clusters, intermediate-mass black holes could still be present in the centers of globular clusters, today.

Our group investigated the presence of intermediate-mass black holes for a sample of 10 galactic globular clusters. We measured the inner kinematic profiles with integral-field spectroscopy and determined masses or upper limits of central black holes in each cluster. In combination with literature data we further studied the positions of our results on known black-hole scaling relations (such as  $M-\sigma$ ) and found a similar but flatter correlation for intermediate-mass black holes. Applying cluster evolution codes, the change in the slope could easily be explained with the stellar mass loss occurring in clusters in a tidal field over its life time. Furthermore, I will present results from IFU simulations on the latest result of the globular cluster NGC6388 as well as simulations on the accretion of IMBHs from surrounding stellar winds.



**29 November 3:30 pm**  
**Bell Room (103), Rutherford Building**

For more information: [msi.mcgill.ca/Seminars.html](http://msi.mcgill.ca/Seminars.html)