## The legacy of HST/WFC3: a prototype for future population studies of exoplanets

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Today, more that 3500 exoplanets have been detected and, despite the significant progress in the field of atmospheric characterisation in the last decade, we still have a limited understanding for a small number of planets. Similarly to the field of exoplanetary detection, atmospheric population studies are the way forward in constraining, which is the current condition of planets, how did they form, and how have they evolved. One of the most successful instruments for observing exoplanetary atmospheres is the Wide Field Camera 3 (WFC3) on-board the Hubble Space Telescope. In particular, the use of the spatial scanning technique has given the opportunity for even more efficient observations of the brightest targets, achieving the necessary precision of 10 to 100 ppm to the flux of the star.

In this presentation, I will discuss the main characteristics of the WFC3/IR instrument, the process followed to develop an automatic analysis pipeline, and the lessons learnt from this process, focusing on the parallel development of both data analysis and simulation software. I will also present the result of this study: an extended catalogue of consistently analysed spectra from HST/WFC3 for cases ranging from super-Earth to Jupiter sizes, from warm to hot temperatures, from clear to cloudy atmospheres. The collective behaviour of these planets with respect to their atmospheric conditions, as well as exceptional cases, such as the super-Earths in the Trappist-1 and 55-Cancri systems will be discussed in more detail. Following a scalable approach is vital for observation planning and data processing in the future, as more dedicated instruments will provide a large number of observations.

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