3D SPECTROSCOPY IN BCDS:

THE SIL DIAGRAMS

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INTRODUCTION

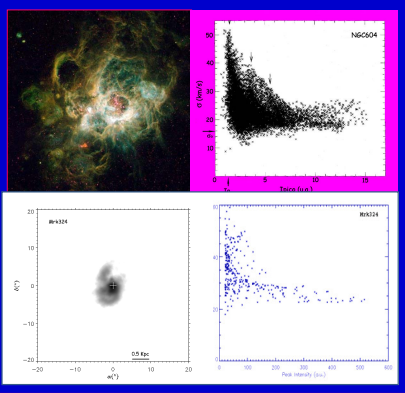
High resolution panoramic spectroscopy with good spatial and spectral resolution is known to be a powewrful tool for studying the kinematics of ionized nebula of a particular emission line over the hole nebula.

This can lead to several tens of thousand of spectra, making it difficult to issue a detailed interpretation of the data. An analysis procedure that has proven to be simple and powerful results from fitting a single Gaussian to each resultant emission line profile (muñoz-Tuñón 1994; Muñoz-Tuñón et al. 1995)

Regardless of the actual degree of asymmetry or splitting in the line profiles, the fit conserves the flux of the line profile, and thus, lower intensity but broader lines would result from the most asymmetric or strongly split lines.

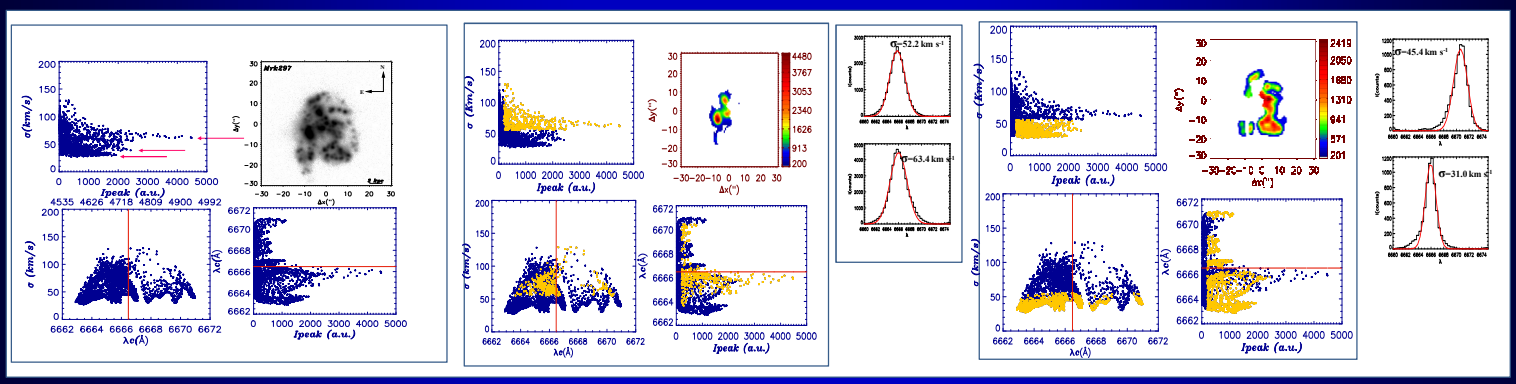
From the resultant fits one can obtain the velocity dispersion (σ), the peak intensity of the fitted lines (Ipeak) and the central wavelength (λc). This method applied to the GHIIRs leads to two distint regions in the σ vs Ipeak diagram (muñoz-Tuñón et al 1996):

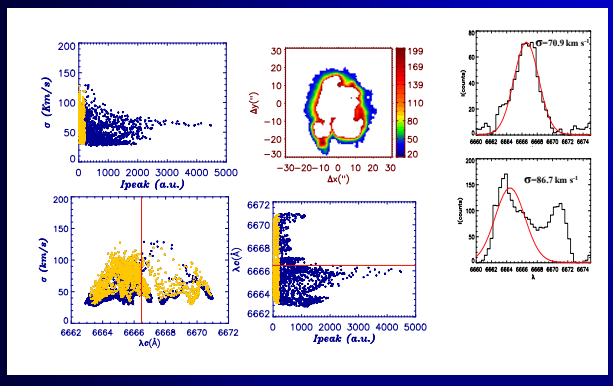
1) a supersonic (σ≥ c_{HII}), narrow horizontal band arising from the brightest portions of the nebula that enclose the clusters of stars where σ~cte
2) a lower intensity and even larger supersonic region, which crowd along multiple inclined bands, that emanate from multiple photoionized shells



Here we extend the analisys to Blue Compact Galaxies (BCGs) showing that they experience a similar dynamical evolution (their σ vs Ipeak diagram look very much like those of the GHIIRs)

We further extend our analisys by looking also at the σ vs λc and λc vs Ipeak diagrams and show them as ideal tools to distinctly unveil the presence of high and low mass stellar clusters.

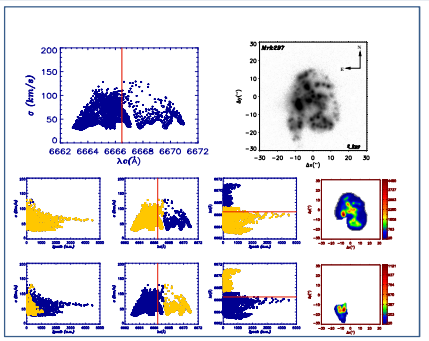




BCDs Properties		
Luminosity	M_B > -18	
Compact Region	D ≤ 1 kpc	
Spectrum	RHII	
Gas Rich	10^8 - 10^9 $M_\odot$	Thuan & Martin 1981
Low Metallicity	1/50 ≤ Z/$Z_\odot$ ≤ 1/3	Kunth y Sargent 1986
SFR	0.1 - 10 $M_\odot$ $año^{-1}$	Fanelli et al 1988
IntermittentBurst		Thuan et al. 1991
Isolated	~70%	Salzer 1989; Telles et al 1997

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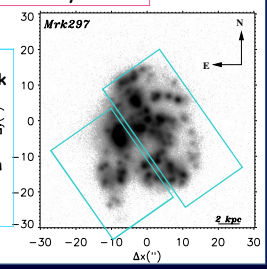
Big Telescope	Alta-azimuthal (BTA)
Diameter	6m
Instrument	SCORPIO-IFP
Spatial Resolution	0.7 " /pixel
Spectral Resolution	0.7 Å
Spectral Range	0.13 Å
Finnese	17
No. of spectral channel	32-40
Seeing	> 1.5 "



Galaxy - Galaxy Collision

Alloin & Duflot (1979) is a *colliding system* between two disk galaxies, one in the NW and the other in the SE

Taniguchi et al (1991) A co-planar radial penetration collision between two disk galaxies



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