2-D Neutral gas kinematics of Luminous and Ultra-Luminous Infrared Galaxies using VLT-VIMOS Integral Field Spectroscopy

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Outline

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- (U)LIRGs and Galactic Winds;

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Luminous and UltraLuminous InfraRed Galaxies and Galactic Winds

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Work, Analysis and First Results

1-D Kinematics: Spatially Integrated Spectra

- Study of the data analysis techniques to extract stellar and neutral gas kinematics (penalized PiXel Fitting technique, *pPXF, Cappellari et al.2004*) for a sample of low redshift (U)LIRGs ($z \leq 0.03$);

Goal: Stellar and neutral gas kinematics for the (38) (U)LIRGs sample;

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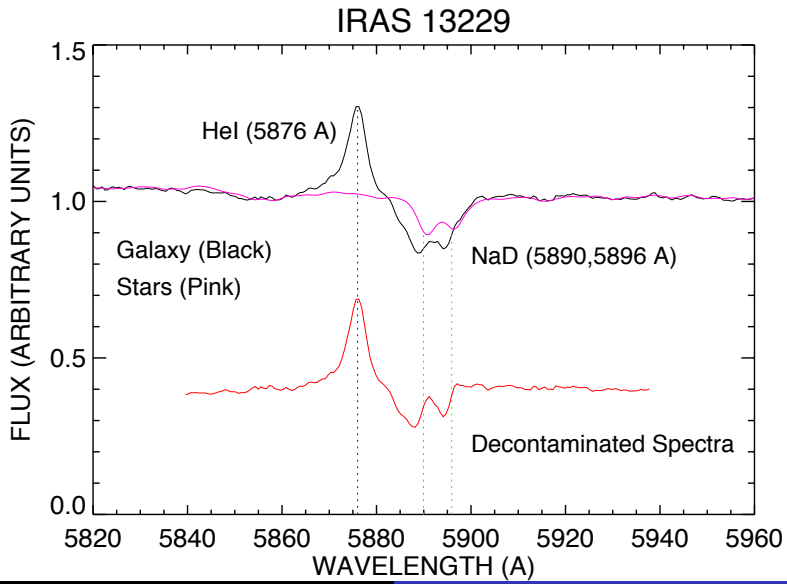
Goal: "Pure" neutral gas kinematics for a high S/N of (10) LIRGs subsample.



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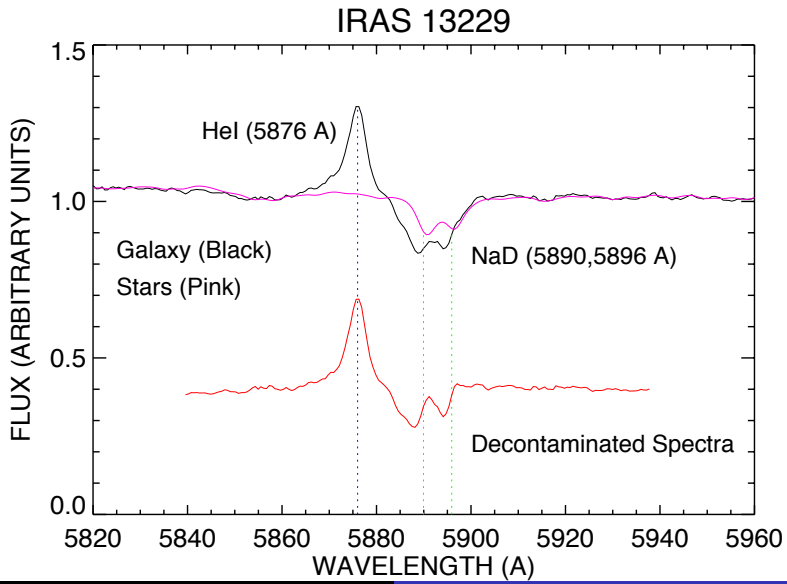
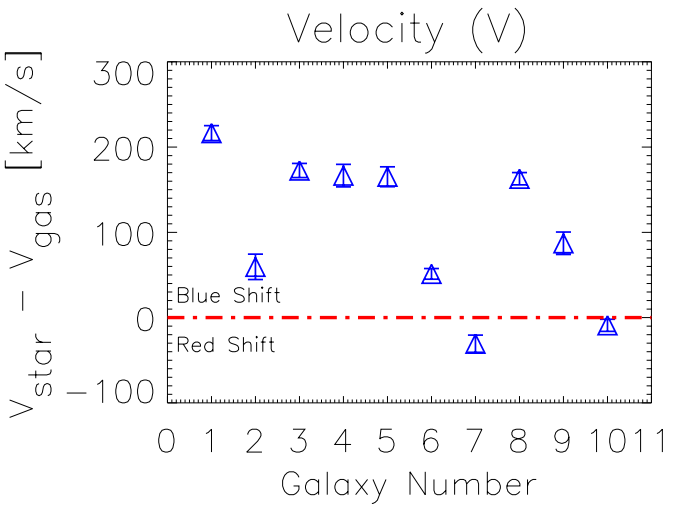
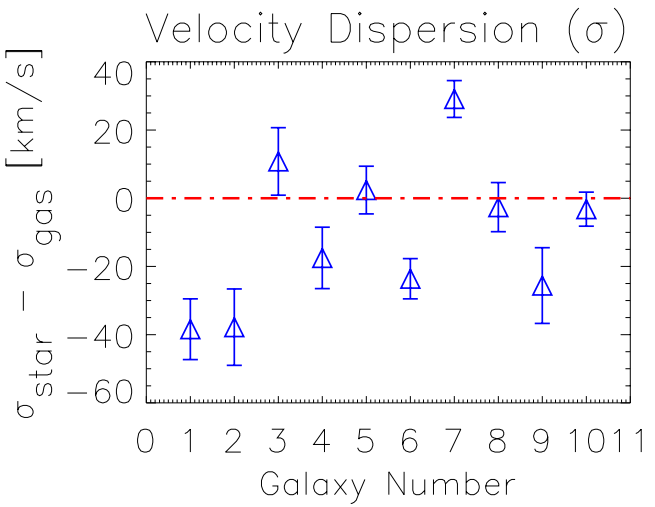
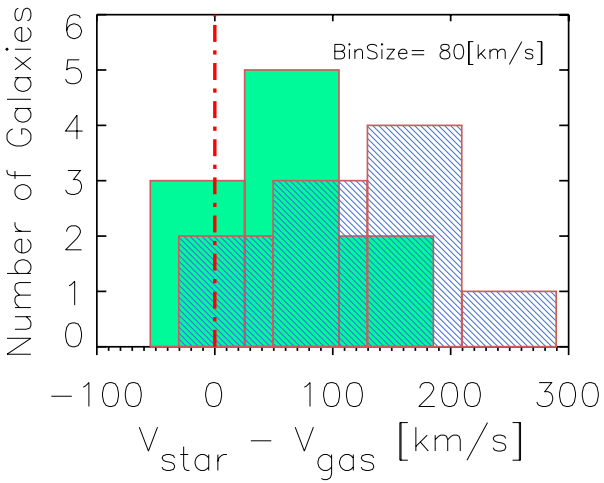


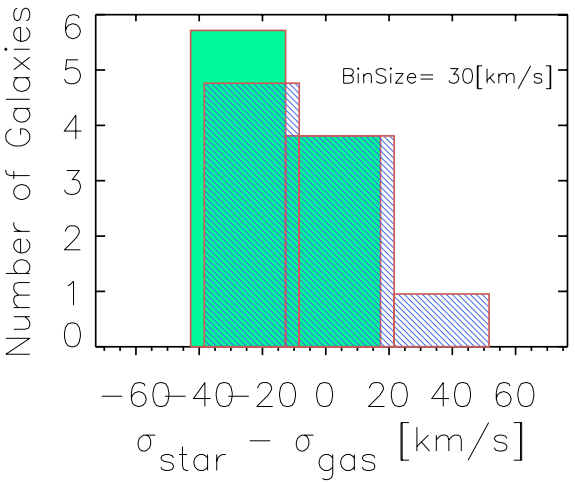
First results for a selected sample of LIRGs



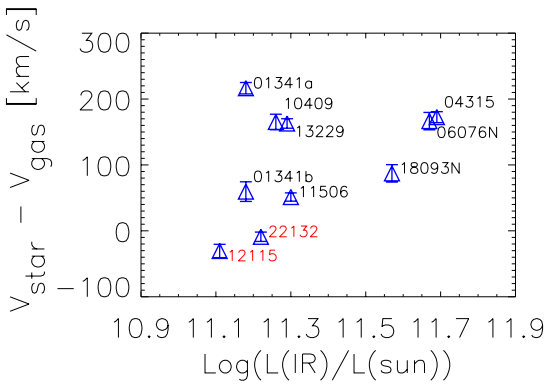


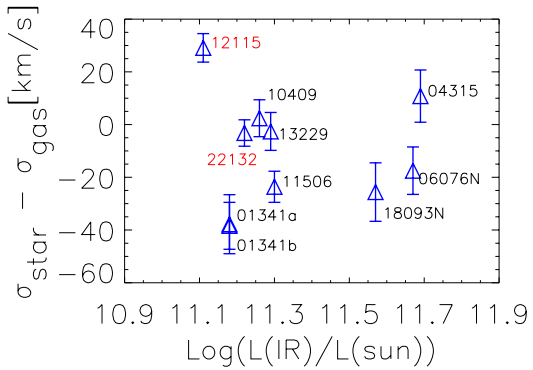
Decontaminated Data (Blue)
Contaminated Data (Green)

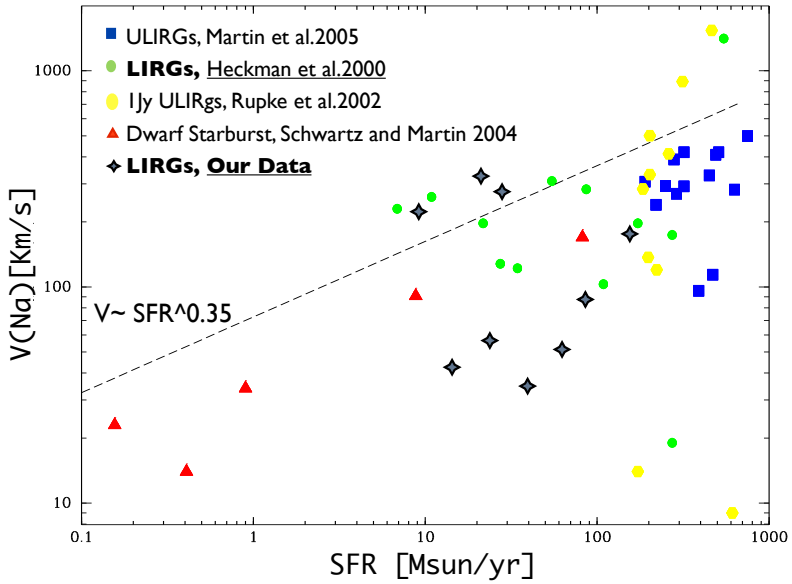




Investigate the dependencies of the neutral gas kinematics with galaxy properties and comparison with literature







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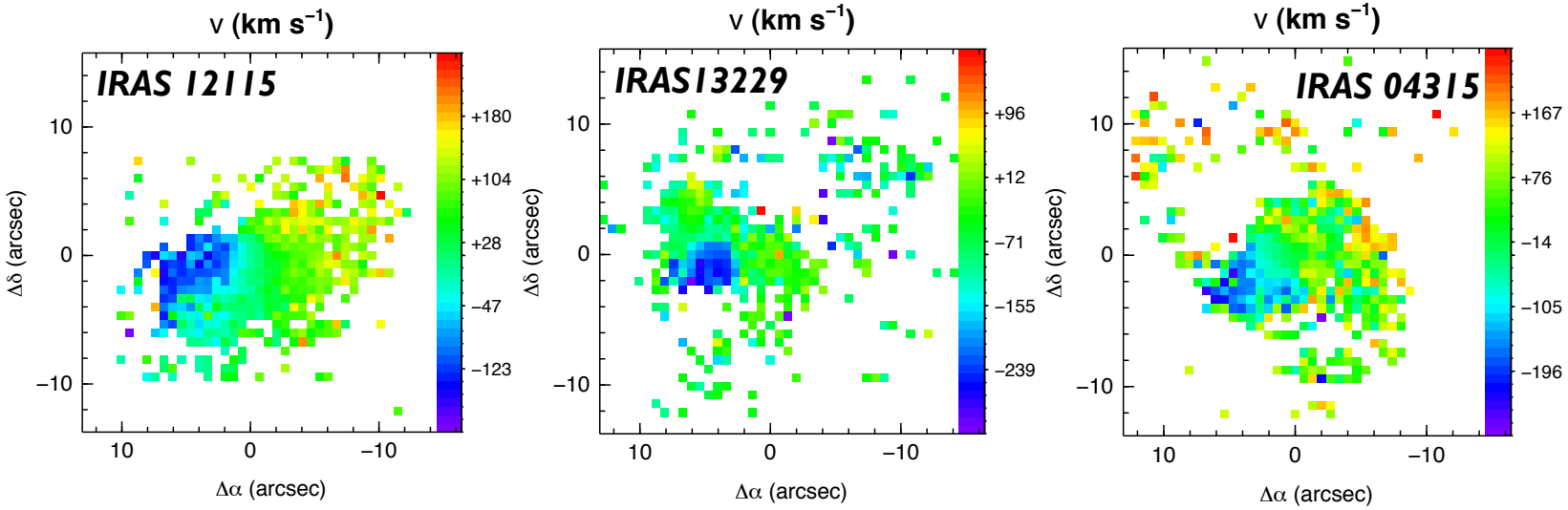
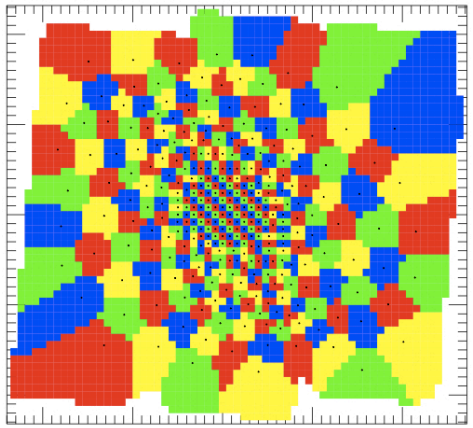
Neutral Gas Velocity Fields and Tesselation Technique



Tessellation Example, *Cappellari et al. 2003*



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A Marie Curie Initial Training Network of the European Union

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And finally . . .

The End

Thanks for your attention

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Cappellari et al. 2004

LOSVD of the stars and gas in a galaxy could be inferred from an observed galaxy spectrum

- fit the spectrum with the convolution of a template spectrum and a velocity profile
- parametrization as a Gauss-Hermite series

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Van Der Marel and Franx (1993)

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AUXILIARY SLIDE