

University of Groningen

3D visualization and analysis of HI in and around galaxies

Punzo, Davide

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2017

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Punzo, D. (2017). *3D visualization and analysis of HI in and around galaxies*. Rijksuniversiteit Groningen.

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Propositions

1. The main role of 3D visualization of HI observations is to aid the interactive analysis of single (or groups of) sources. (Chapter 2)
2. Interactive 3D visualization provides an immediate overview of all the coherence in the spatial and velocity dimensions. In particular, it is very efficient for inspecting complex emission around galaxies such as tidal tails. (Chapter 2)
3. Filtering coupled with interactive 3D visualization provides a powerful tool to find and inspect very faint HI structures such as filaments. (Chapter 3)
4. The Intensity-driven gradient filter is the optimal choice for enhancing the signal-to-noise ratio (S/N) of HI data because of its adaptive characteristics. (Chapter 3)
5. The 3D *CloudLasso* selection technique is an essential tool to help analysis in the 3D space and strongly enhances the efficiency and effectiveness of the analysis itself. (Chapter 4)
6. Embedded modeling in a visualization tool greatly helps the identification and analysis of different HI components of the data. (Chapter 4)
7. The components of *SlicerAstro*: quantitative and comparative 3D visualization, 3D user interaction and analysis capabilities, and coupled 2D/3D displays offer an effective toolbox that can enhance the analysis of complex sources. (Chapter 4)
8. The quality of the cuisine of a country is correlated with the “product” of the local culture and geography location (e.g., amount of Sunshine).
9. A not *sufficient*, but *necessary* condition for cooking proper carbonara is the use of these ingredients: proper Roman pecorino, guanciale, black pepper and two fresh eggs per person.
10. Any personal achievement tastes unsatisfactory if it cannot be shared with the loved ones in the evening.