Articles for Review

Interstellar Medium:

The Spin temperature of warm inter-stellar HI, 2001, Liszt, A&A, 371, 698

Probes of turbulent driving mechanisms in molecular clouds from fluctuations in synchrotron intensity, Herron, Federrath, Gaensler, 2017, MNRAS, 466, 2272

The structure and stability of interstellar molecular absorption line profiles at radio frequencies, Liszt & Lucas, 2000, A&A, 355, 333

Star Formation:

Radiation Transfer of Models of Massive Star Formation. III. The Evolutionary sequence, 2014, ApJ, 788, 2
Yichen Zhang, Jonathan C. Tan, and Takashi Hosokawa

Radiative transfer modelling of W33A MM1: 3D structure and dynamics of a complex massive star-forming region, Izquierdo et al. (2018), MNRAS, 478, 2505

Spherically Symmetric Model Atmospheres for Low-Mass Pre-Main-Sequence Stars with Effective Temperatures between 2000 and 6800 K, Allard, Hauschildt & Schweitzer, 2000, ApJ, 539, 366

Stellar Atmospheres:

TiO and H_2O Absorption Lines in Cool Stellar Atmospheres, Allard, Hauschildt, Schwenke, 2000, ApJ, 540, 1005

SN feeback:

Cosmological smoothed particle hydrodynamics simulations: a hybrid multiphase model for star formation, Springel & Hernquist, 2003, 339, 289

A model of supernova feedback in galaxy formation, Efstathiou, 2000, MNRAS, 317, 697

AGN feedback:

Relativistic plasmas in AGN jets, https://arxiv.org/pdf/1702.06779.pdf (La Mura et al. 2017)

AGN outflows as neutrino sources: an observational test, Padovani et al., 2018, MNRAS, 477, 3469

How to Find Variable Active Galactic Nuclei with Machine Learning?, Faisst et al., 2019, *https://arxiv.org/abs/1908.07542*

UV background:

Radiative Transfer in a clumpy Universe, Haardt & Madau, 1996, ApJ, 461, 20

Reionisation and the abundance of Galactic Satellites, Bullock, Kratsov & Weinberg, 2000, ApJ, 539, 517

How low does it go? Too few Galactic satellites with standard reionization quenching, Graus et al., arxiv:1808.03654

Starburst Galaxies:

High Energy Emission from the Starburst Galaxy NGC253, Rephaeli & Persic, MNRAS, 401, 473

WHIM:

Absorption signatures of warm–hot gas at low redshift: broad HI Lyα absorbers, Tepper-García, Thorsten; Richter, Philipp; Schaye, Joop; Booth, C. M.; Dalla Vecchia, Claudio; Theuns, Tom, 2012, MNRAS, 425, 1640

Cosmic Rays:

Galaxy Clusters:

Diffuse Radio Emission in/around the Coma Cluster: Beyond Simple Accretion, 2011, Brown & Rudnick, https://arxiv.org/abs/1009.4258

J-PLUS: Analysis of the intracluster light in the Coma cluster, 2019, Jimenez-Teja et al., https://ui.adsabs.harvard.edu/abs/2019A%26A...622A.183J/abstract

Shock Waves and Cosmic Ray Acceleration in the Outskirts of Galaxy Clusters, 2014, Hong et al., https://ui.adsabs.harvard.edu/abs/2014ApJ...785..133H/abstract

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Misc:

Three-Dimensional Dust Radiative Transfer, 2013, Steinacker, Baes, Gordon, Annual Review of Astronomy and Astrophysics, Vol 51: 63-104, https://doi.org/10.1146/annurev-astro-082812-14104

Voigt profile fitting to quasar absorption lines; an analytic approximation to the Voigt-Hjerting Function, Tepper-García, Thorsten, 2006, MNRAS, 369, 2025

Observations of Solids in Protoplanetary Disks, Andrews, 2018, PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF THE PACIFIC, 127:961–993, 2015

A link between feedback outflows and satellite galaxy suppression, Nayakshin & Wilkinson, 2013, *https://academic.oup.com/mnras/article/433/1/324/1032004#92654192*

Hands-On Projects

Project(s) proposed by Benjamin:

He pensado que como trabajo para incluir en vuestra evaluación, y dado que hemos seguido una progresión en las cuatro sesiones y la hemos repetido un par de veces con tres estrellas de la lista que os proporcioné, podríais tomar al azar una de las cuatro estrellas que no hemos tocado (números 2, 3, 4 y 5) y hacer el proceso con ella. Los paso serían:

- Con los datos V, B-V y paralaje, estima una clasificación espectral, clase de luminosidad, temperatura efectiva y gravedad (te ayudarán las tablas que tenéis en el directorio 0_data/).

- Intenta ajustar un modelo de Kurucz a la SED de la estrella, usando los modelos almacenados en dipso.

- Consulta el capítulo correpondiente del libro de Gray & Corbally y mira qué líneas son sensibles a la temperatura y a la luminosidad (gravedad). Genera una pequeña red de modelos, y estima cuál es el que mejor se adapta al espectro observado.

- Haz una pequeña discusión de los resultados.

Presentation

Your end-of-course presentation should be 10 to max. 15 minutes long and cover the following aspects

- general introduction into the field
- objectives of the actual work: what are the aims?
- description of the methodology used to reach those objectives
- results
- discussion of results: why is this interesting?
- possible future follow-up investigations

As a general remark: prepare your presentation in such a way that your fellow students are able to understand it. That means, someone who is not an expert should clearly apprehend the relevance of the results. Therefore, you should give a clear (yet brief) introduction into the field and motivate the results well.

In case you have chosen a literature research project, please note that it is not always important to present and discuss every single plot of the paper. You should focus on the most relevant result(s) and explain those well.