Annual meeting, CAMK

22nd january 2025

Insights from the circumstellar envelopes of Cepheids in the JWST era

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Post-doc at CAMK

Scientific production

First author:

Hocdé V., Moskalik P. et al., 2024a, *A&A, published*
Hocdé V., Smolec R. et al., 2024b, *A&A, published*
Hocdé V., Matter A. et al., 2025a, *A&A, in press*
Hocdé V., Kaminski T. et al., 2025b, *A&A, in press*

Second author:

Nardetto N., **Hocdé V. et al.** 2024, *A&A, published*

Others contributions:

Rathour, Rajeev Singh et al. 2024, A&A, published
Rathour, Rajeev Singh et al. 2025, A&A, in press
Wielgorski, Piotrek et al. 2024, A&A, published
Bras, Garance et al. 2024, A&A, published

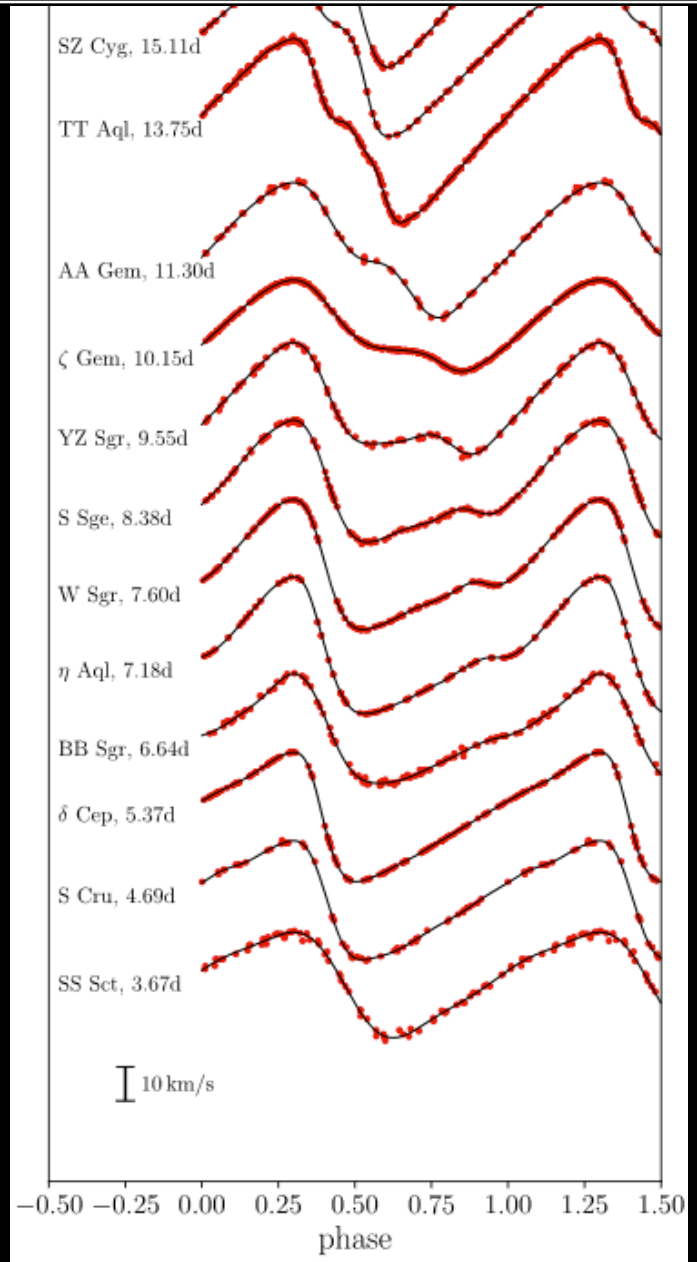
Proceeding:

Hocdé V., Smolec R., Moskalik P.
Annual meeting of the French Society of Astronomy and Astrophysics

Observation time awarded: 143 h

ALMA :	**9 h**	Rang A
VLA:	**21 h**	Rang B
NOEMA/IRAM:	**32 h**	Rang B
GRAVITY/VLTI:	**63 h**	Rang A
MATISSE/VLTI:	**18 h**	Rang B

Precise Fourier parameters of Cepheid radial velocity curves



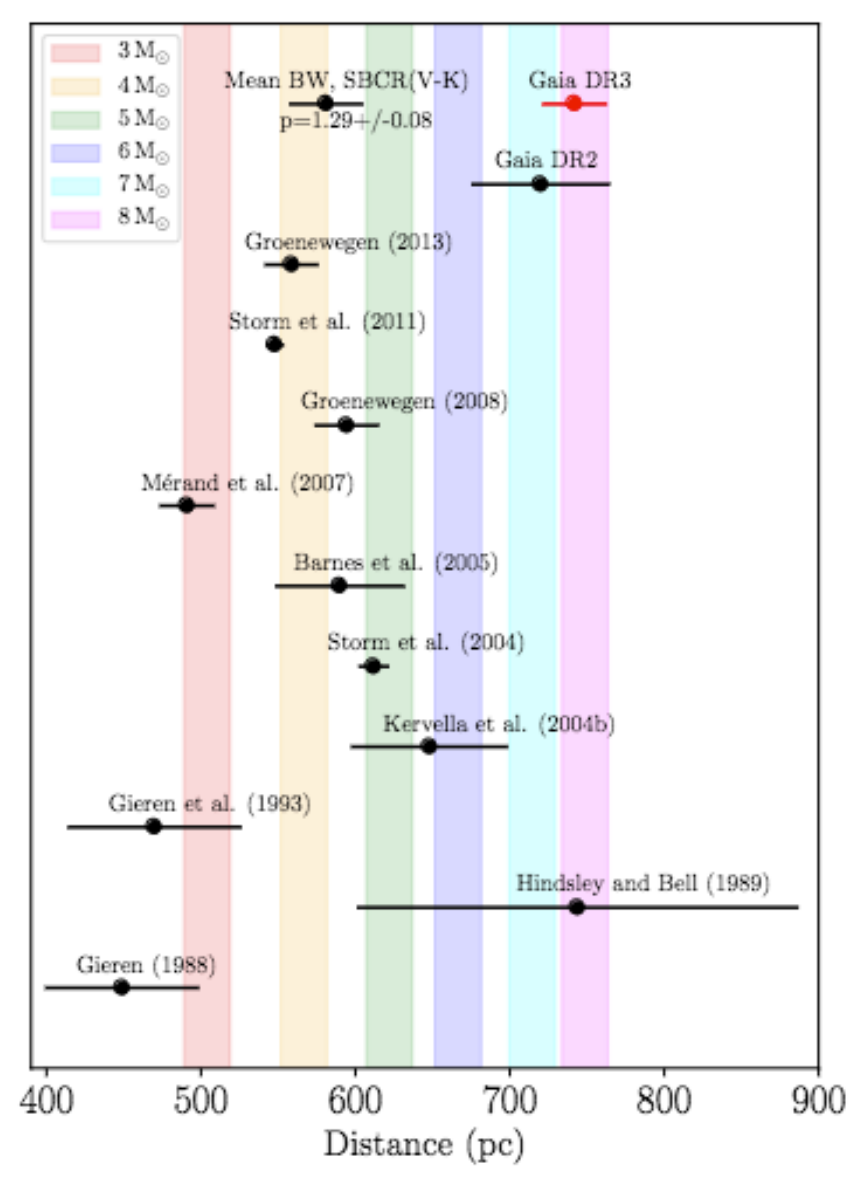
Astronomy & Astrophysics, Volume 689, id.A224, 26 pp

→ 218 Cepheids

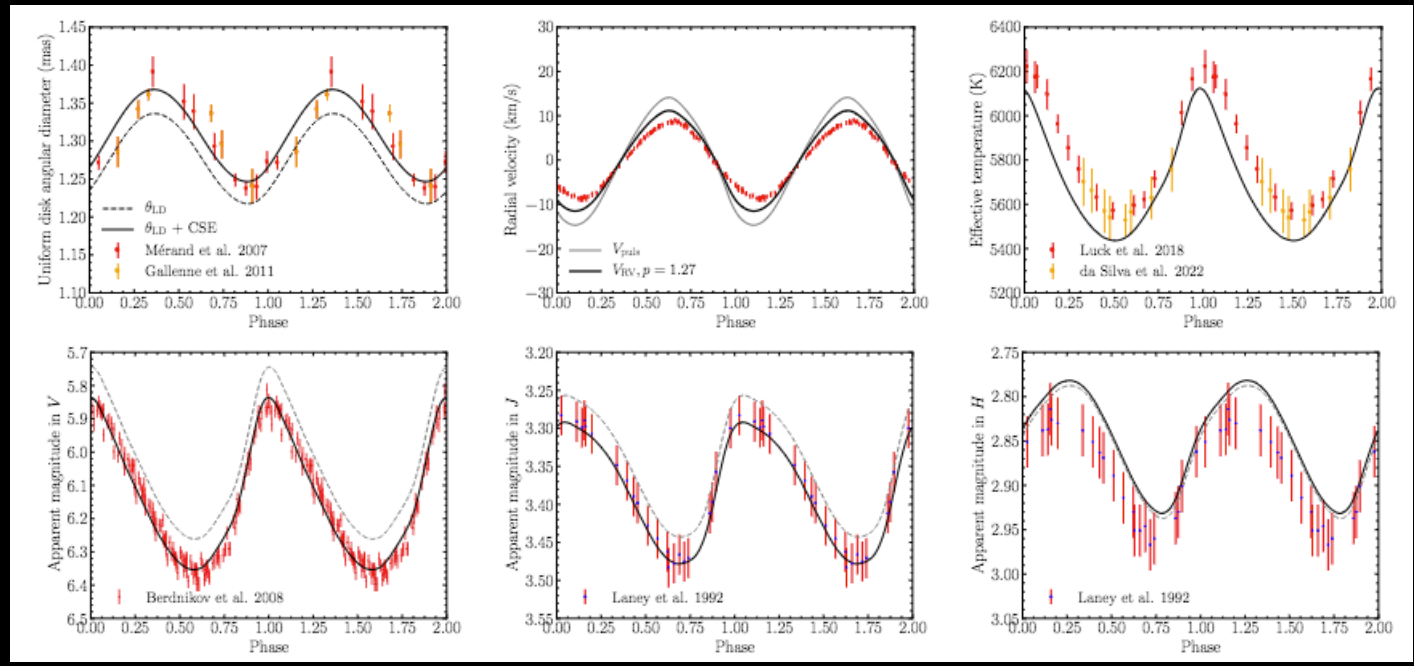
→ Baade-Wesselink method

→ Constraints to improve pulsation models

Pulsation modeling of the Cepheid Y Ophiuchi with RSP/MESA



Astronomy & Astrophysics, Volume 683, id.A233, 22 pp

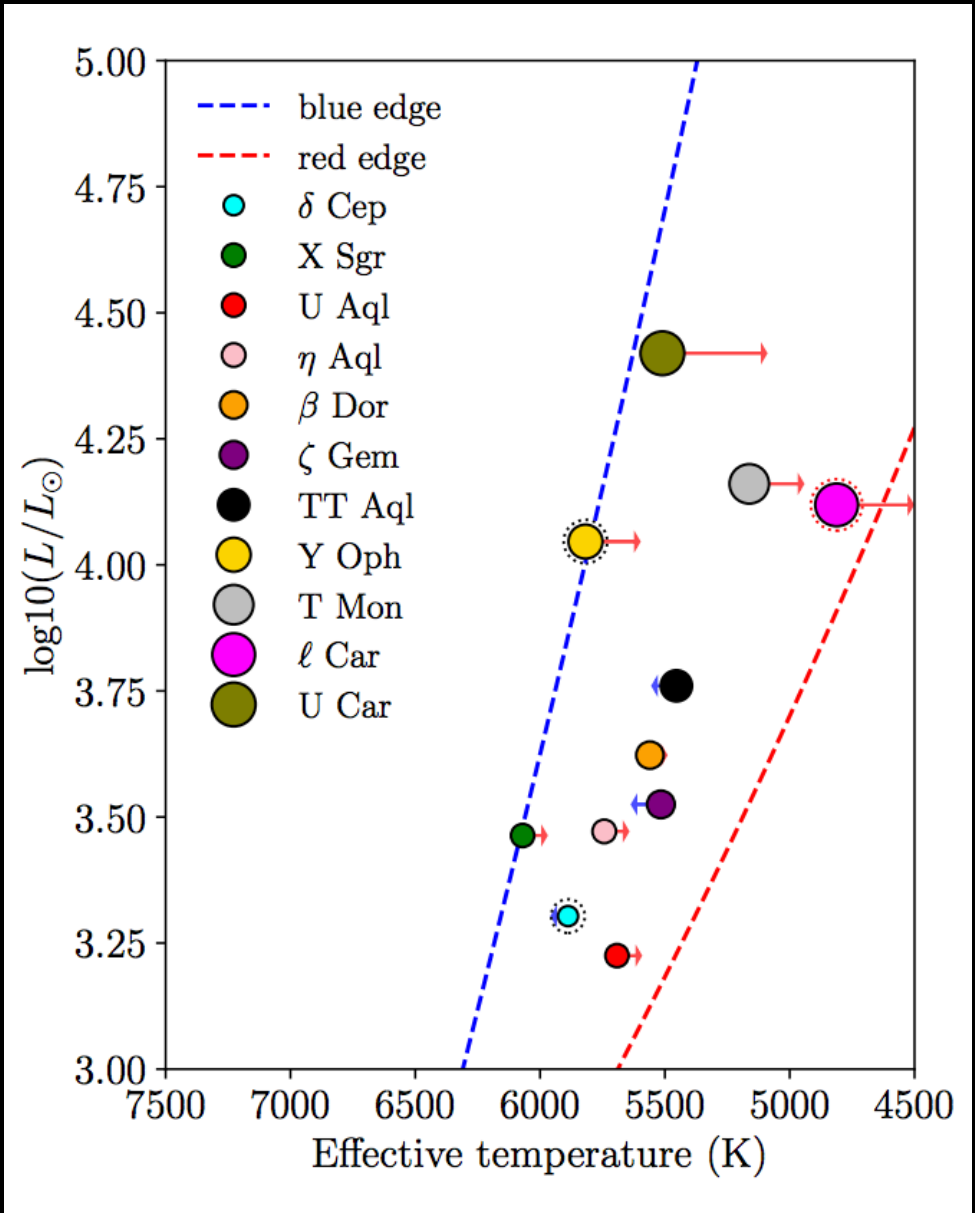


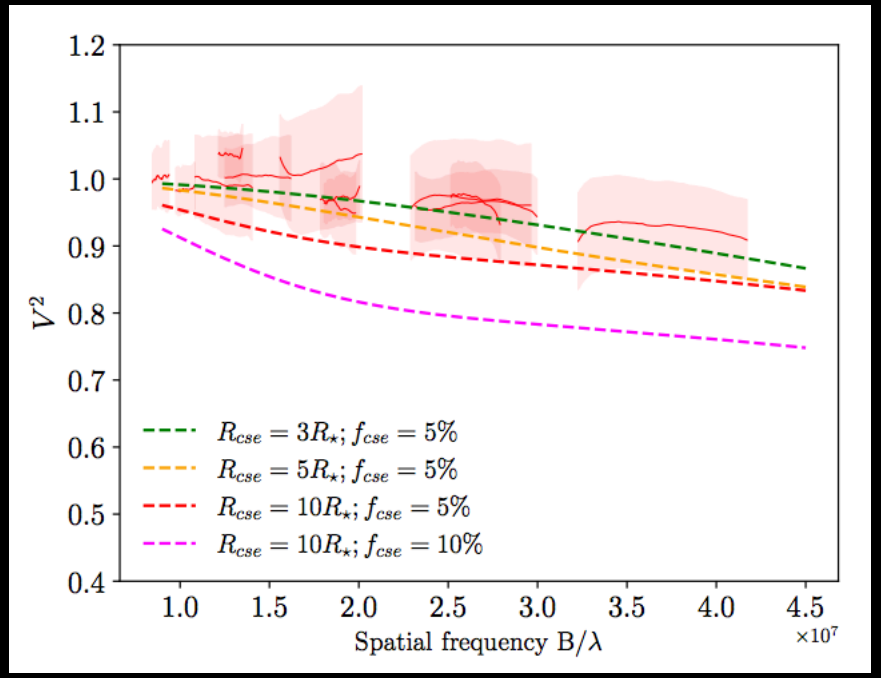
→ Pulsation models in agreement with Gaia distance

→ High projection-factor (Baade-Wesselink method)

→ Circumstellar emission impacts the photometry of the star

Circumstellar emission of Cepheids across the instablity strip with VLTI/MATISSE

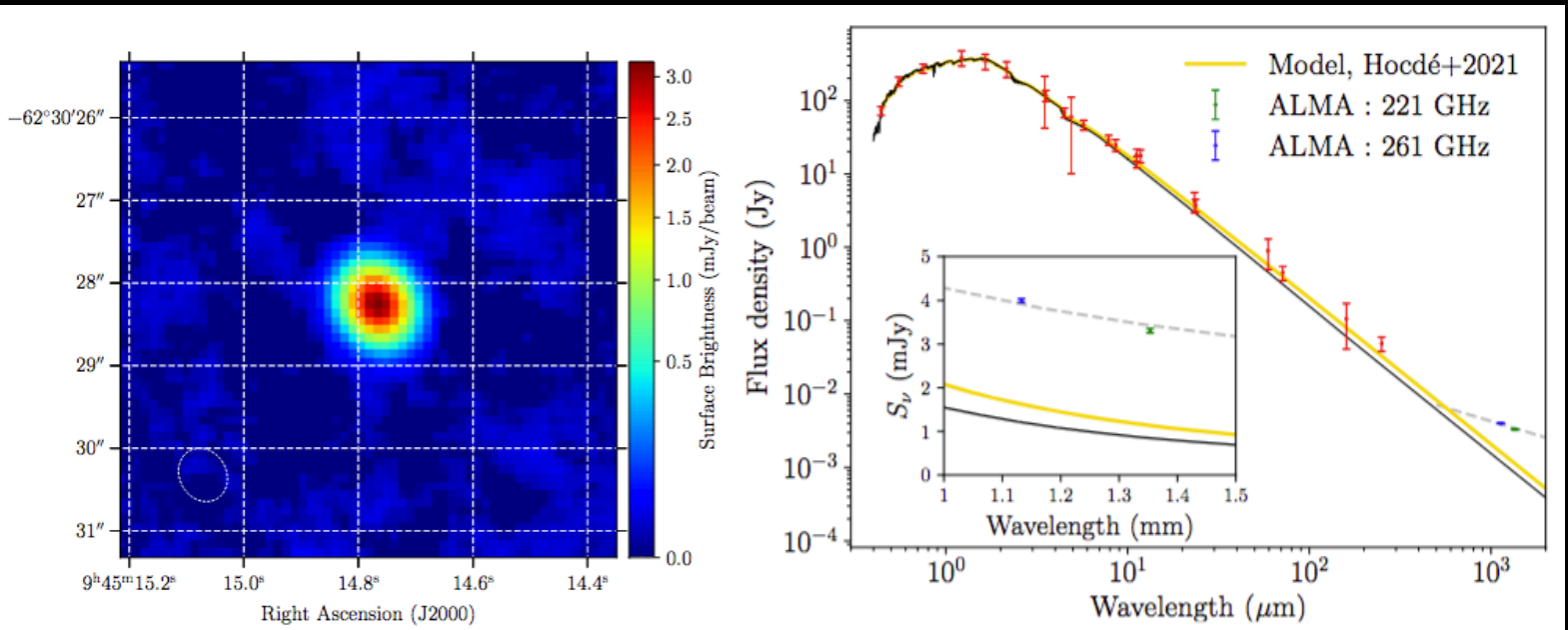


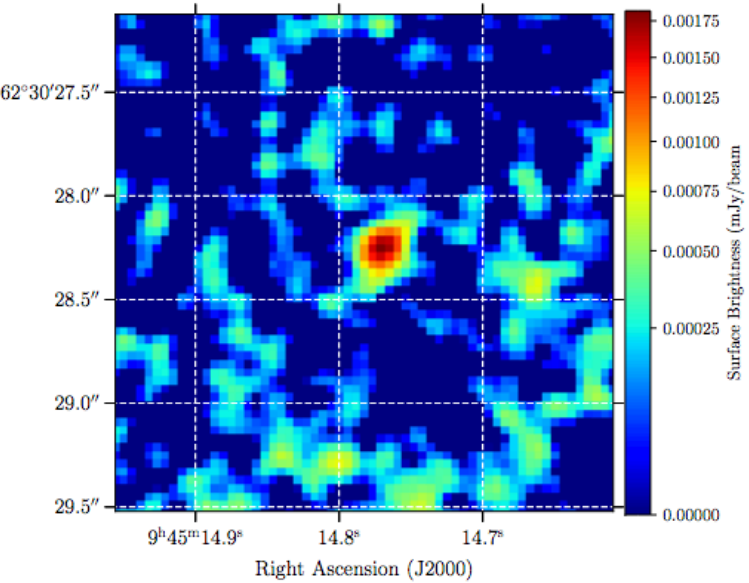


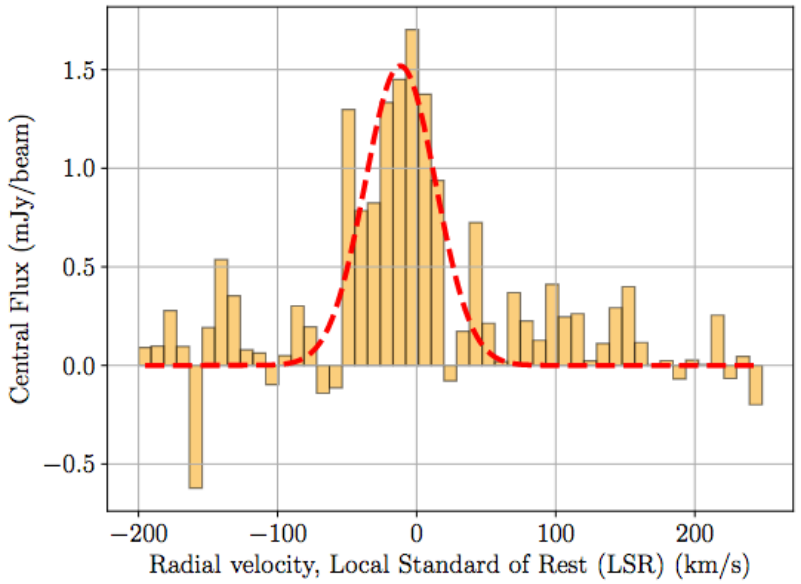
→ No dust contribution for ALL stars

→ Upper limits on the Circumstellar emission

Discovery of ionized circumstellar gas emission around the long-period Cepheid ell Carinae with ALMA







1) Strong radio excess ~3mJy > 1mJy
2) Spectral index ~1.4
3) Radio recombination line Hα29 !