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ABSTRACTS OF CONTRIBUTED PAPERS

KINEMATICS AND DISTRIBUTION OF INTERSTELLAR MATTER IN OB STELLAR ASSOCIATIONS

Norma Caballero[1], M. Cristina Martín[1], and Carlos Olano[1]

We are analyzing 21-cm line H I observations, as well as 115 GHz CO lines, in the region l = 90 to 160, b = −10 to 20. The particular interest is the region of Cepheus that contains a nearby group of young star associations. In order to obtain the parameters of the main components, a Gaussian analysis was performed on the line profiles. The preliminary results show that some components of interstellar matter are related with the Cepheus associations and Gould's belt.

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H I BUBBLES IN PER OB1 ASSOCIATION

Cristina Cappa[1,2,3], Virpi Niemela[2,4], and Uwe Herbstmeier[5,6]

We have studied the distribution of neutral gas in the vicinity of the Per OB1 association, searching for signatures of the interaction of the stellar winds with the surrounding medium. Our study is based on neutral hydrogen 21-cm emission line observations obtained with the 100-m single-dish antenna (HPBW = 9 arcmin) at Effelsberg, Germany, and data from the H I survey (HPBW = 36 arcmin) by Weaver & Williams (A&AS 1973).

From the survey data we have found that most of the early type stars in the Per OB1 association appear to be located inside a large H I bubble, i.e., a region of low H I emission surrounded by denser gas clouds. This structure, which is clearly seen in the velocity range −33 to −18 km s^{-1}, is centred at $(l, b) = (134.°5, -2.°0)$, has a diameter of about 200 pc, and a low expansion velocity.

The Effelsberg observations, which have higher spatial resolution, have disclosed that inside the large structure there are smaller H I bubbles surrounding the three evolved O type stars in the association, namely, HD 14947 (O5If+), HD 16691 (O5If+) and HD 14442 (O5n(f)p). The dimensions of these smaller bubbles range 22 – 45 pc and their expansion velocities are of about 10 km s^{-1}, implying dynamical ages of about (1–2)×10^6 yr. They have most probably been blown by the stellar winds of the O stars.

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NUMERICAL SIMULATIONS OF PROTOSTELLAR WIGGLING JETS

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Most supersonic protostellar jets show a collimated wiggling, and knotty structure (e.g., the Haro 6-5B jet) and frequently reveal a long gap between this structure and the terminal bow shock.

We present 3-dimensional smoothed particle hydrodynamical simulations (SPH) (e.g., Gouveia Dal Pino & Benz 1993, 1994, Chernin et al. 1994, Gouveia Dal Pino & Cerqueira 1996) which suggest that this morphology may be due to the interaction of the propagating cooling jet with a non-homogeneous ambient medium. In regions where the ambient gas

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