attained in ZEUS-3D and are all stable. Furthermore, there is a very good agreement with the velocity and density fields from ZEUS-3D and our code, having differences between the terminal velocities lower than 3%.

In addition, we found that ZEUS-3D is very sensitive to the boundary conditions (base density and velocity profile), in some cases we obtain *kinks* in the velocity profiles, similar to the ones obtained by Madura et al. (2007) for stars with high rotation. Such kinks are most likely the result of the wind being mass overloaded, but further investigation is needed to understand its nature better.

Currently, we are exploring the effects of small perturbation at the base of the wind in order to study possible transitions or oscillations between δ–slow and fast solutions.

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EFFECTS OF NON-STANDARD NEUTRINO EMISSION ON THE EVOLUTION OF LOW-MASS STARS

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Using the Pools et al. (1995) version of the STARS code with updated numerical tables for neutrino plasmon decay (Kantor et al. 2007), along with the reinterpretation of the Reimers mass-loss prescription by Schröder et al. (2005), we analyze the consequences of enhanced neutrino emission on the internal structure and late evolution of the degenerated cores in low-mass stars, the non-standard increase in tip-RGB luminosity and the impact on the calibration of the Reimers mass-loss mechanism and the changes driven in post-RGB phases. With synthetic spectra generated with the PHOENIX code Baron & Hauschildt et al. (1997), we also study the dependence of the non-standard increase in brightness on the selected NIR photometric band. By comparing our stellar evolutionary models with the synthetic spectra and the photometric data base of $\omega-$Cen by Sollima et al. (2004), we find the limit value $\mu_\nu \leq 2.2 \times 10^{-12} \mu_B$.

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WIND STUDY OF B SGS STARS

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The estimation of the stellar and wind parameters of B SG stars, give us important information to understand their evolution. It is known from previous studies that the A type non-rotating (or slow rotator) SGs stars can have two types of solution: one fast and one slow. Here we study the two types of solutions for eight B SGs stars (HD41117, HD42087, HD79186, HD52382, HD80077, HD52382, HD75149, HD53138) using the hydrodynamics to calculate the velocity profile and using the modified version of FASTWIND to reproduce the H_α line profile. Finally, we compare these results with the β Law using FASTWIND and HDUST code. We obtained less mass loss values using FASTWIND than hydrodynamic ones (in a factor between 2-3). The Wind-Luminosity Relation agrees with Kudritzki et al. (1999) for the velocity profiles β type, but for the values found with hydrodynamics the relation has a negative slope. For the ratio v_∞/v_{esc}, we obtained as the v_{esc} increases the v_∞ decreases, like it was found by Curé et al. (2011) for δ-slow solutions.

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ON MAGNETIC FIELDS IN BAROTROPIC STARS

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Although barotropic matter does not constitute a realistic model for magnetic stars on short timescales, it would be interesting to confirm a recent conjecture that states that magnetized stars with a barotropic equation of state would be dynamically unstable (Reisenegger 2009). In this work we construct a set of barotropic equilibria, which can eventually be tested using a stability criterion. A general description of the ideal MHD equations governing these equilibria is summarized, allowing for both poloidal and toroidal magnetic field components. A new

finite-difference numerical code is developed in order to solve the so-called Grad-Shafranov equation describing the equilibrium of these configurations, and some properties of the equilibria obtained are briefly discussed.

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OWN SURVEY: RESULTS AFTER SEVEN YEARS OF HIGH-RESOLUTION SPECTROSCOPIC MONITORING OF SOUTHERN O AND WN STARS

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We describe briefly the main results of the high-resolution spectroscopic monitoring survey of southern Galactic O- and WN-type stars. The high-resolution spectroscopic monitoring survey of O and WN stars (*OWN Survey*, Barbá et al. 2010) has completed seven years of sustained campaign, using observational facilities in Chile and Argentina. The selected sample corresponds to those stars for which there is no indication of multiplicity in the Galactic O-star Catalog (Maíz Apellániz et al. 2004) and the VII Catalogue of Galactic WR stars (van der Hucht 2001). We have collected almost 5000 spectra of about 240 O and WN stars. From that sample of 190 O-type stars, we have discovered 146 stars showing radial variations greater than 10 km/s, including 108 new systems, being 56 single-lined spectroscopic binaries, 43 double-lined spectroscopic binaries, and 9 multiple-lined binaries. The new orbital periods spanning from 1.5 to 2200 days. In this work, we present the main result of "OWN Survey": the determination of orbits for over fifty O-type spectroscopic binary systems, and the analysis of the spectral-type, luminosty, period, eccentricity, and mass-ratio distributions. This result is unprecedented in the context of massive binary stars, since we are almost doubling the number of Galactic O-type star systems with known orbits.

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COLLISIONS BETWEEN GLOBULAR CLUSTERS

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The study of globular clusters (GC) plays an important role in our understanding of the Universe since these systems are true laboratories for theories of stellar dynamics and evolution. We are interested in studying a globular cluster formed by a collision between two different GC with NBODY6 (Aarseth, 2003). Firstly, in order to understand this code, we analyse how tidal streams form from a globular cluster in a circular orbit (on the disk) around the center of the Milky Way. In the next stage of this work we will study that collision. The stellar escape or capture from globular cluster can be understood with the Restricted Three Body Problem. These stars escape in a chaotic orbit, and in some cases may return (again in a chaotic orbit) to the cluster due to the Galactic potential. In most cases, such stars quickly alter their escape chaotic orbits to orbits that are similar to the parent cluster's orbit. Our results show an agglomeration of stars in a normal direction related to the direction towards the center of the Milky Way, forming thus a stream. We can explain this considering that a circular orbit around the dominant potential is the most likely orbit, since it requires minimum energy. In this coordinate systems, the tidal tails (or streams) rotates around the cluster center with the same mean motion associated to cluster around the Milky Way center.

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SEARCHING FOR CYCLICAL PERIOD VARIATIONS IN CATACLYSMIC VARIABLE STARS

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Cataclysmic variables (CVs) are close binary systems where the late-type star (the secondary) overfills its Roche lobe and transfers matter to a white dwarf

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