This result is very important to understand the dynamical processes that affect the binary systems, and may lead to their dissolution, associated to the distribution of matter (stars, molecular clouds) in the Galaxy.

We present numerical simulations of fictitious wide binaries subject to the perturbing influence of random passing stars. Our results show that binaries with separations up to about 5×10^4 AU remain stable for time scales comparable to the solar system age. Yet, perturbations caused by giant molecular clouds during penetrating encounters may greatly decrease the maximum separation of stable systems. We plan to incorporate this effect as a next stage of this study.

QUASI-SEPARATRIX LAYERS IN SIMPLE MAGNETIC CONFIGURATIONS

C.H. Mandrini[1], P. Démoulin[2], J.C. Hénoux[2], and E. Priest[3]

Magnetic reconnection is thought to be linked to the presence of magnetic null points, and to be accompanied by the transport of magnetic field lines across separatrices. Since flaring magnetic configurations present very different characteristics, this view is too restrictive. In previous studies we have shown that solar flare kernels are linked to the topology of the active-region magnetic field. The observed photospheric field was extrapolated to the corona using subphotospheric sources and the topology was defined by the magnetic linkage between these sources, the method being called Source Method (SM). In this work we define a new method, called Quasi-Separatrix Layers Method (QSLM), which finds the location of QSLs above the photosphere and generalizes the concept of separatrices to magnetic configurations without field-line linkage discontinuities. QSLs are regions where there is a drastic change in field-line linkage. Priest & Démoulin (1996) have demonstrated that 3D magnetic reconnection may occur at QSLs in the absence of null points. The method can be applied to any kind of magnetic field representation. The QSLM defines elongated regions that are in general located along small portions of the separatrices determined by the SM. In bipolar magnetic configurations two QSLs are found at both sides of the inversion line, while four appear in quadrupolar configurations. This distribution of QSLs agrees with that of flare brightenings. We conclude that the QSLM gives a more realistic representation of the magnetic field topology above the photosphere.

Priest, E., & Démoulin, P. 1996, J.G.R. in press

[1]Instituto de Astronomía y Física del Espacio, IAFE-CONICET, Buenos Aires, Argentina

[2]Observatoire de Paris, DASOP, URA326 (CNRS), France

[3]Math. and Comp. Sciences Dept., The University, St. Andrews, KY169SS, Scotland, UK

FINE MASER STRUCTURE OF POST-AGB OH/IR STARS AT L BAND

V. Migenes[1], E. Lüdke[2], R.J. Cohen[3], P.F. Bowers[4], and M.C. Shepherd[5]

Data processing from combined data gathered from interferometric observations made with different arrays provide radio maps with high spatial resolution and sensitivity as attained with VLBI techniques. The improved *(u,v)* coverage which is particularly good on short antenna spacings allows to obtain high-quality radio maps of OH MASER shells surrounding luminous MASER sources which are coincident with strong infrared emission.

In this work, we present radio interferometric maps at 1667 and 1612 MHz of two stellar OH MASER sources which have been obtained with this technique. The star OH357.31–1.33 exhibits anisotropy in the outflow and a tentative evidence for mutual exclusion. An OH/IR system in transition to a planetary nebula, OH0.9+1.3 is resolved suggesting a scenario for the early stages of shell growth.

The radio maps shown here provide insight into the mass loss processes in these systems and their evolutionary states. They reveal not only the full extension of the shell but also finer details than the available data in the literature indicating that the mass ejection in these systems is not isotropic and that the shell may not be uniform.

[1]The VSOP Project-NAO, Osawa, Tokyo, Japan

[2]UFSM/LACESM-Centro de Tecnologia, Santa Maria/RS, Brazil

[3]Manchester University, NRAL, Jodrell Bank, UK

[4]Naval Research Laboratories, 20375 Washington DC, USA

[5]California Institute of Technology, Pasadena, CA, USA