

# Spinning-down of magnetars in the propeller regime

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We have used axisymmetric magnetohydrodynamic simulations to investigate the spinning-down of magnetars rotating in the propeller regime and moving supersonically through the interstellar medium. The star loses its angular momentum due to direct interaction of the rotating magnetospheres with the non-rotating interstellar medium. The simulations indicate that magnetars spin-down rapidly due to this interaction, much faster than for the case of a non-moving star. A magnetar with a surface magnetic field of  $10^{13}$  -  $10^{15}$  G is found to spin-down to a period  $P > 10^5$ - $10^6$  s in  $10^4$  -  $10^5$  yr.