

TeV gamma-rays from pulsars with a kick velocity - The Vela Plerion

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Abstract. Recent theoretical and observational information indicate that pulsars are experiencing a kick velocity in the direction of the spin-axis. The consequence of this is that highest energy electrons confined to the neutral sheet will be swept backwards and confined by the toroidal field lines pointing back to the birthplace of the pulsar. Current knowledge of diffusion theory predicts that the perpendicular diffusion coefficient is much less than the parallel value, with the

consequence that TeV electrons in the neutral sheet can be convected to the birthplace without losses. We will discuss the constraints and apply this knowledge to the Vela pulsar for which TeV emission was detected at the birthplace. We will also consider PSR B1706-44 for which unpulsed TeV emission was detected.