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# Effects of ACRs on excursion of the termination shock with the solar cycle

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Effects of anomalous component of cosmic rays (ACRs) influence on variation of the location of the termination shock with the solar cycle are investigated. The dynamic pressure of the solar wind changes by factor of two during 11-year solar cycle. The heliospheric termination shock varies under the influence of the dynamic pressure variations. In this paper we consider three-component spherically symmetric time-dependent model of the solar wind interaction with the local interstellar medium, which takes into account influence of plasma, H atom and ACRs components. Mutual influence of plasma and ACRs components is treated self-consistently. We present results of a parametric study by varing diffusion coefficient, efficiency of injection of ACRs at the termination shock and number of interstellar H-atoms. Results are compared with previously published global models of the time-dependent heliosphere (e.g. Izmodenov and Malama, 2004; Izmodenov et al. 2005; Scherer and Fahr, 2003; Mueller and Zank, 2003).