▸ ROLAND SH. OMANADZE, AND ANDREA SORBI, *s-reducibility and immunity properties.*
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We proceed our investigation of immunity properties of s-degrees, initiated in [1], in which it is shown that the complete s-degree $\deg_{\mathrm{s}}(\overline{K})$ does not contain any Δ^0_2 hyperhyperimmune set, where $\overline{K}$ is the complement of the halting set. We show that neither the immune nor the hyperimmune s-degrees are upwards closed since there exist Δ^0_2 s-degrees $\mathbf{a} \leq_{\mathrm{s}} \mathbf{b}$ such that $\mathbf{a}$ is hyperimmune, but $\mathbf{b}$ is immune free. This contrasts with the fact that the immune and hyperimmune e-degrees are upwards closed, [2]. We also show that there is no hyperhyperimmune Π^0_2 set A such that $\overline{K} \leq_{\hat{\mathrm{s}}} A$, where $\leq_{\hat{\mathrm{s}}}$ denotes the finite-branch version of s-reducibility; this gives as a particular case a result already proved in [1], that $\deg_{\hat{\mathrm{s}}}(\overline{K})$ is hyperhyperimmune free.

[1] R. Sh. Omanadze and A. Sorbi., *A characterization of the Δ^0_2 hyperhyperimmune sets.*, ***The Journal of Symbolic Logic***, vol. 73 (2008), no. 4, pp. 1407–1415.

[2] M. G. Rozinas, *Partial degrees of immune and hyperimmune sets.*, ***Siberian Mathematical Journal***, vol. 19 (1978), no. 4, pp. 613–616.