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On some monotonicity properties of the p-torsional rigidity

For a bounded domain $\Omega \subset \mathbb{R}^N$, $N \geq 2$ and a real number $p > 1$, we denote by u_p the p *-torsion function* on Ω, that is the solution of the *torsional creep problem* $\Delta_p u = -1$ in Ω, $u = 0$ on $\partial\Omega$, where $\Delta_p := div(|\nabla u|^{p-2} \nabla u)$ is the p-Laplace operator. In this talk we are going to present some monotonicity properties for the p *-torsional rigidity* on Ω, defined as $T_p(\Omega) := \int_\Omega u_p dx$, and for $p \to T(p; \Omega) := |\Omega|^{p-1} T_p(\Omega)^{1-p}$.