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**BRUNN-MINKOWSKI TYPE INEQUALITIES RELATED TO THE MONGE-AMPÈRE EQUATION**

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Let  $\Omega \subset \mathbb{R}^n$  be strictly convex and let  $0 \leq p < n$ . Define the functional  $F_p(\Omega) = -\int_{\Omega} u \det D^2 u$ , where  $u$  solves the homogeneous Dirichlet problem for the Monge-Ampère equation  $\det D^2 u = |u|^p$  in  $\Omega$ . Generalizing results known for the Laplace and p-Laplace operators,  $F_p$  satisfies a Brunn-Minkowski type inequality. In the case  $p = 0$ , equality conditions for this inequality will also be established. Related open problems will also be presented.

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