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## MEASURES WITH THE MEAN VALUE PROPERTY FOR $L$ -HARMONIC FUNCTIONS: AN INVERSE PROBLEM

Let  $L$  be a linear hypoelliptic second order PDO in divergence form with nonnegative characteristic form in  $\mathbb{R}^n$ . A probability measure  $\mu$  in an open set  $\Omega$  is said to have the mean value property for the  $L$ -harmonic functions in  $\Omega$  if there exists a point  $x_0 \in \overline{\Omega}$  such that

$$u(x_0) = \int_{\Omega} u(y) d\mu(y)$$

for every nonnegative solution to  $Lu = 0$  in  $\Omega$ . In this case we will say that  $(\Omega, \mu, x_0)$  is an  $L$ -triple. In this talk we present general positive answers to the following inverse problem. Let  $(\Omega, \mu, x_0)$  and  $(D, \nu, x_0)$  be  $L$ -triples. If  $\mu = \nu$  in  $\Omega \cap D$ , is it true that  $\Omega = D$  (and hence  $\mu = \nu$ ) ?