

# Domain Recognition By Border Observation In Dimension 1 & 2

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## Abstract :

*The objective of this work, which was conducted at eINOV and Laboratory of Computer Science, Telecommunications and Applications (LITA) was to carry out the determination procedures to identify a domain by looking border. We proved that if well-defined signals are sent on the known edge  $\Gamma_0$  of a regular field  $\Omega$  of  $R^n$  ( $n=1, 2$ ), where prevail some phenomena modeled by partial derivative equations and that following a certain number of ow measurements on the same edge, knowing  $\int_{\Gamma_0} \frac{\partial u}{\partial n} g d\Gamma$  (where  $n$  indicates the normal external of  $\partial\Omega$ ), it is possible to find a method which leads to the determination of  $\Omega$ . The demonstration were made in the stationary case with dimension  $n=1, 2$  and arbitrary form.*

**Keywords:** Distribution theory, Transmission theory, Domain recognition, border.



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