

SEMINÁRIOS DO NÚCLEO DE MODELAGEM ESTOCÁSTICA – NUMES  
DEPARTAMENTO DE ESTATÍSTICA, UFES

# STATISTICAL ANALYSIS OF STATIONARY SPATIAL AND SPATIO-TEMPORAL RANDOM PROCESSES: AN INTRODUCTION

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**Abstract:** In many fields such as geomining, climatology and environmental sciences, we observe a process  $\{z(s), s \in \mathbb{R}^d\}$  (usually  $d = 2$ ) and we are interested in the analysis of such processes. For example, assume  $d = 2$  and let us to observe  $\{Z(s_i); i = 1, 2, \dots, n\}$  on a finite plane.

**Problem:** Given  $\{Z(s_i); i = 1, 2, \dots, n\}$  predict  $Z(s_0)$ , where  $s_0$  is a known location. This problem is called *Kriging*. We define various statistical characteristics which lead to estimate  $\{Z(s_0)\}$ . We extend the area to take into account temporal dimension. The problem is not easy, lot of research is going on in this area.

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