

# SEMINÁRIO

## SISTEMAS DINÂMICOS

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### Non-hypercyclicity for certain classes of linear dynamical systems

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#### Abstract:

The investigation of the properties of bounded linear maps on certain vector spaces (Hilbert or Banach spaces, for example) is a very rich and active area.

In particular, the existence of dense orbits (that in this context is known as hypercyclicity) attracts a lot of attention, as well as the extension of classical results to this setting, like hyperbolicity and shadowing, among many others. A source of examples is the weighted shift, defined as  $B_w(x_1, x_2, x_3, \dots) = (w_2x_2, w_3x_3, \dots)$  where  $w_i$  are positive and bounded real numbers and  $x = (x_1, x_2, \dots)$  is a point of the space  $\ell_p(N)$ . Another map, with a less rich dynamics, is the diagonal map defined on the same space by

$D_\lambda(x_1, x_2, \dots) = (\lambda_1x_1, \lambda_2x_2, \dots)$ , where  $\lambda_i$  is a complex number with norm  $< 1$ . It is also useful to consider the map  $T_{w,\lambda} = D_\lambda + B_w$ , where hypercyclicity is known to hold for some parameters. Our goal in this talk is to exhibit some conditions for  $\lambda$  and  $w$  where the map is NOT hypercyclic; we also show how to extend the method for another class of linear maps.

This is a joint work with G. Pessil (UFRGS).