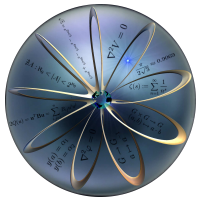

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nullcline

Canonical name	Nullcline
Date of creation	2013-03-22 14:27:14
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Let

$$\begin{aligned} \dot{x}_1 &= f_1(x_1, \ldots, x_n) \\ &\vdots \\ \dot{x}_n &= f_n(x_1, \ldots, x_n) \end{aligned}$$

be a system of first order ordinary differential equation. The x_j *nullcline* is the set of points which satisfy $f_j(x_1, \ldots, x_n) = 0$. Note that at an intersection point of all the nullclines implies that

$$\begin{aligned} 0 &= f_1(x_1, \ldots, x_n) \\ &\vdots \\ 0 &= f_n(x_1, \ldots, x_n). \end{aligned}$$

Hence the intersection point of all the nullclines is an equilibrium point of the system.

example:

- see some qualitative analysis of FitzHugh-Nagumo equation using nullclines