Something Cool

1 Motivation

Hello

We assume that we are working with a woman of age 65, height of 161.8 cm, and weight of 75.5 kg.

Our functional is

$$J[\mathbf{u}] = \int_0^{156} \mathbf{u}(t)^\intercal Q\mathbf{u}(t) + T^2(t)\,\mathrm{d}t + \xi_{156}T^2(156)$$

The concentration for each drug must meet the following constraints

$$0 \leq q_{c_i} \leq 800mg * BSA$$
$$0 \leq q_{d_i} \leq 80mg * BSA$$

Furthermore, the elements of the state evolve according to

$$\frac{\mathrm{d}T(t)}{\mathrm{d}t} = g_T T \ln\Big(\frac{T_{max}}{T}\Big) - a_1 NT - a_2 NKT - a_3 CDT - \Big(E_c D_c + \frac{4}{5}E_d D_d\Big)T,$$
$$\frac{\mathrm{d}N(t)}{\mathrm{d}t} = g_N N \ln\Big(\frac{N_{max}}{N}\Big) - k_N - a_0 NT,$$
$$\frac{\mathrm{d}CD(t)}{\mathrm{d}t} = r_{CD} - k_{CD} - \frac{\rho_0 CDT^i}{\alpha_0 + T^i} - a_4 CDT - b_{CD}D_c CD,$$
$$\frac{\mathrm{d}NK(t)}{\mathrm{d}t} = r_{NK} - k_{NK} - \frac{\rho_1 NKT^i}{\alpha_1 + T^i}.$$

A Definitions

- Invasive Ductal Carcinoma: invasive breast cancer that starts in the milk ducts, the tubes that carry milk from the lobules to the nipple. [**?**] Hello

References