## Bachelor–/Student–/Masterthesis

Pituitary–Thyroid Feedback Loop

The pituitary-thyroid feedback loop is crucial for the human organism. The functionality of many organs relies on the right supply of thyroid hormones. A detailed understanding of the pituitary-thyroid feedback loop plays a key role to treat and cure various endocrine diseases. On the one hand, this research direction aims to deepen the understanding of diseases related to the pituitary-thyroid feedback loop. On the other hand, improved medication strategies shall be developed for common diseases as Hashimoto's thyroiditis or Graves' disease. These objectives are tackled by means of mathematical models of the pituitary-thyroid feedback loop.

Particular tasks for a possible thesis include a literature search, implementations in Matlab/Simulink and detailed system-theoretic analysis of the developed/extended mathematical model of the pituitary-thyroid feedback loop.

Requirements
Being motivated to work in this field, Good skills in Matlab/Simulink, Background in Biomedical and Control Engineering (lectures RT I & II, (NLC, MPC))
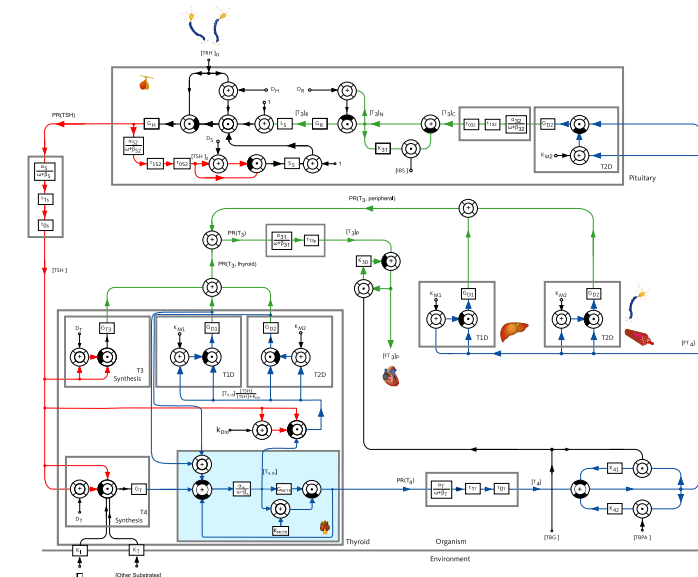
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