"Short- and long-term physiologic control of a ventricular assist device"

Due to the increasing number of severe heart failure patients and the current organ donation crisis, mechanical circulatory support has become more important for bridge-to-transplant as well as for destination therapy. To reduce the patients’ dependency on clinical management, an automatic and robust physiologic control system is needed which adjusts the pump’s output in accordance to the patients’ demand. The short- and long-term physiologic control concept of our new ventricular assist device will be presented. This includes the simulation model, the reconstruction of physiologic control variable and the safety and testing strategy during development and verification of the proposed control scheme.