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Homeostasis of exercise hyperpnea and optimal sensorimotor integration: The internal model paradigm.

Traditional control theories are built upon a rich mathematical foundation which provides rigorous solutions for specific control problems. However, many complex control problems in real life do not lend themselves to exact mathematical or computational solutions. The human brain is faced with many challenging control problems where modern robotics pales by comparison. This talk will cover research work done at MIT on adaptive optimal control strategies employed by the brain. Mathematical modeling of various biological processes leads to new insights for the intelligent estimation, identification and control of nonlinear stochastic or chaotic dynamical systems.

References

- [1] C. B. Poon, C. Tin, Y. Yu, SHomeostasis of exercise hyperpnea and optimal sensorimotor integration: The internal model paradigm. *Respir Physiol Neurobiol.* 2007 Mar 7.