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Abstract:	Scaling laws of physiological variables like life-span or metabolic rate with organism mass across biological species provide hint to underlying universal features of organisation in nature. One such law is the “Kleiber’s Law” which is the observation that basal metabolic 3 rate, B, is related to organismal mass, M , via the power law, B M 4 . The validity of such laws is often debated due to the noisy nature of data, absence of measurable parameters and lack of appropriate biological model organisms. In this thesis, we propose the use of a new model organism, Snowflake Yeast, a mutated strain of Saccharomyces cerevisiae, to test the validity of the Kleiber’s law. Using microfluidics and isothermal calorimetry, we have arrived at data that seems to contradict the Kleiber’s law. We also review the theoretical treatments to model the growth of the Snowflake and attempt to model its growth to explain the scaling relation.
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