

Heart stroke-volume variability in a murine model for heart failure with reduced ejection fraction

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Abstract

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I. INTRODUCTION

II. MATERIALS AND METHODS

A. Poincaré Plots

Heart rate variability has been measured using a variety of techniques. The majority of them are based on the notion of signal stationarity. However, the heart rate's inherently nonstationary nature—which undergoes continuous physiological change to adapt to outside stimuli—presents a significant challenge that could lead to inaccurate results. Although a number of signal preprocessing methodologies have been suggested to address these problems, nonlinear analysis-based strategies are frequently used and seem to produce reliable result. One of them that is used in different scientific domains is the Poincaré plot.

III. EXPERIMENTAL RESULTS

IV. MATHEMATICAL MODEL

V. CONCLUDING REMARKS

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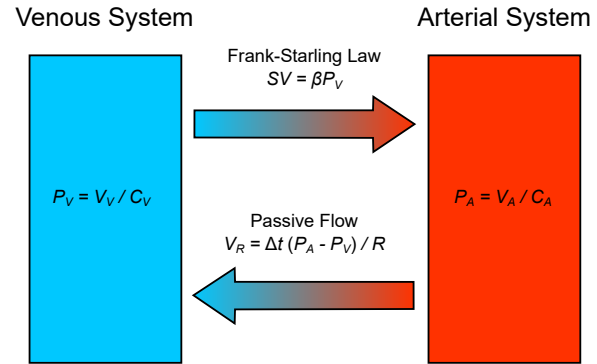


FIG. 1. Schematic representation of the model