1023-37-1157 **Elena D Surovyatkina*** (`selena@iki.rssi.ru`), Delaware State University, 1200 N. DuPont Highway, Dover, DE 19901, and **Mazen Shahin**. *Pre-bifurcation Amplification and Nonlinear Saturation of Noise Correlation Time.*

A new non-linear fluctuation phenomenon is reported: pre-bifurcation amplification of noise correlation time followed with saturation in the immediate vicinity of the bifurcation threshold. Analysis of the phenomenon is performed by the example of a period-doubling bifurcation in a noisy non-linear map. It is shown that in frame of linear approximation noise correlation time infinitely increases near the bifurcation point, whereas nonlinear theory predicts saturation of the correlation time on the level, inverse proportional to the noise standard deviation. It is pointed out, that similar regularities are expected to be valid also for other kinds of bifurcations. Theoretical consideration is illustrated by the result of numerical simulation. Qualitative as well as quantitative features of the pre-bifurcation amplification of the noise correlation time are exhibited using cardio dynamics model. It is suggested to use the pre-bifurcation amplification of the noise correlation time as a technique to detect the impending bifurcation (such as cardiac alternans). (Received September 25, 2006)