

The figure displays five vertically stacked line plots showing the time evolution of the order parameter S over time for different values of the parameter α . The y-axis for all plots ranges from -0.4 to 0.6. The x-axis represents time in days, with labels indicating the date and time (e.g., 0:12, 12:00, 0:12, etc.).

- Top Plot ($\alpha = 0.001$):** Shows a highly oscillatory behavior with S values ranging from approximately -0.1 to 0.6. The red line with diamond markers follows the black line with '+' markers closely.
- Second Plot ($\alpha = 0.002$):** Shows a similar oscillatory behavior, but with slightly different amplitudes and phases compared to the first plot.
- Third Plot ($\alpha = 0.005$):** Shows a more regular oscillatory behavior with S values ranging from approximately -0.2 to 0.2. The red line with diamond markers follows the black line with '+' markers closely.
- Fourth Plot ($\alpha = 0.01$):** Shows a more regular oscillatory behavior with S values ranging from approximately -0.2 to 0.2. The red line with diamond markers follows the black line with '+' markers closely.
- Bottom Plot ($\alpha = 0.02$):** Shows a more regular oscillatory behavior with S values ranging from approximately -0.2 to 0.2. The red line with diamond markers follows the black line with '+' markers closely.

Sample size: 719
Correlation coefficient: 0.917
Mean Error: -0.08
Standard deviation of error: 0.082
Coefficients: 0.087 1.125
RMS error: 0.118

Sample size: 58
Correlation coefficient: 0.927
Mean Error: -0.07
Standard deviation of error: 0.060
Coefficients: 0.072 1.005
RMS error: 0.094