skfda.datasets.make_sinusoidal_process

skfda.datasets.make_sinusoidal_process(*n_samples: int = 15, n_features: int = 100, *, start: float = 0.0, stop: float = 1.0, period: float = 1.0, phase_mean: float = 0.0, phase_std: float = 0.6, amplitude_mean: float = 1.0, amplitude_std: float = 0.05, error_std: float = 0.2, random_state=None*)
[source]

Generate sinusoidal proccess.

Each sample $x_i(t)$ is generated as:

$$x_i(t) = \alpha_i \sin(\omega t + \phi_i) + \epsilon_i(t)$$

where $\omega = \frac{2\pi}{\text{period}}$. Amplitudes α_i and phases ϕ_i are normally distributed. $\epsilon_i(t)$ is a gaussian white noise process.

Parameters:

- **n_samples** – Total number of samples.
- **n_features** – Points per sample.
- **start** – Starting point of the samples.
- **stop** – Ending point of the samples.
- **period** – Period of the sine function.
- **phase_mean** – Mean of the phase.
- **phase_std** – Standard deviation of the phase.
- **amplitude_mean** – Mean of the amplitude.
- **amplitude_std** – Standard deviation of the amplitude.
- **error_std** – Standard deviation of the gaussian Noise.
- **random_state** – Random state.

Returns: `FDataGrid` object comprising all the samples.