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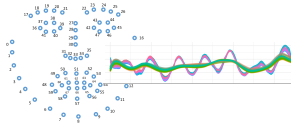
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<https://github.com/mxochicale/reponame>

Towards the Analysis of Movement Variability for Facial Expressions with Nonlinear Dynamics

🐦@CERE_Emotion #CERE2018

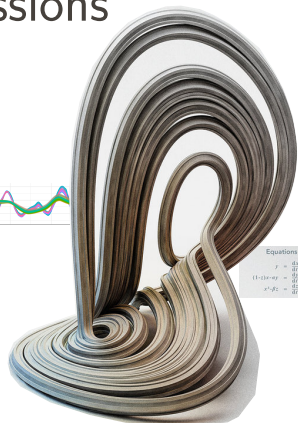
Glasgow, Scotland, 4-5 April 2018



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Equations :
 $\dot{x} = \frac{dx}{dt}$
 $(1-x)xy = \frac{dy}{dt}$
 $x^2yz = \frac{dz}{dt}$

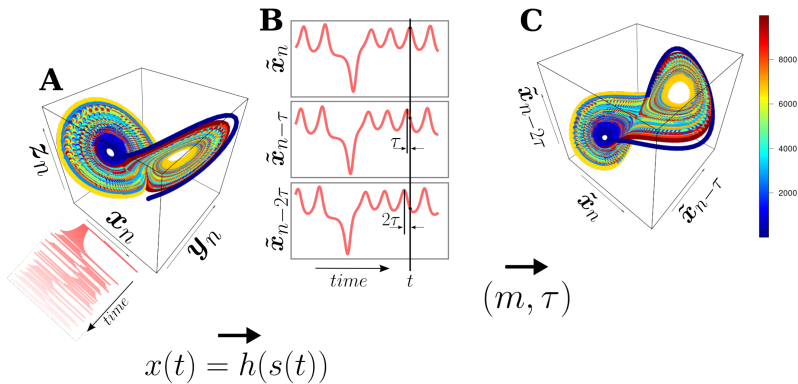
The Shimizu - Morioka Attractor

MOVEMENT VARIABILITY

WHAT IS MOVEMENT VARIABILITY?

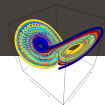
MOVEMENT VARIABILITY is defined as the variations that occur in motor performance across multiple repetitions of a task and such behaviour is an inherent feature within and between each person's movement.

PICTURE WITH CREDIT LINE



CONCLUSIONS AND FUTURE WORK

CONCLUSIONS FUTURE WORK



- (+) Quantification for Arm Movement and Head Pose Estimation Variability with Nonlinear Dynamics is possible. However,
- (-) the timeseries from the landmarks are mounted on the pose location of the head.
- Test other techniques of Nonlinear Dynamics, e.g. Lyapunov Exponents, Recurrent Quantification Analysis
- Use of Convolutional Neural Networks for automatic identification of Movement Variability

BIBLIOGRAPHY



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»New Perspectives in Human Movement Variability«

Ann Biomed Eng. 2013.



Cao Liangyue

»Practical method for determining the minimum embedding dimension of a scalar time series.«

Physica D, 110, 43-50, 1997.



Xochicale M P

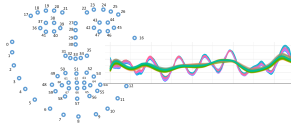
»Emotion and Movement Variability: a pilot study«

GitHub repo (2018), [https://](https://github.com/mxochicale/emmov-pilotstudy)

github.com/mxochicale/emmov-pilotstudy [🔗]

Towards the Analysis of Movement Variability for Facial Expressions with Nonlinear Dynamics

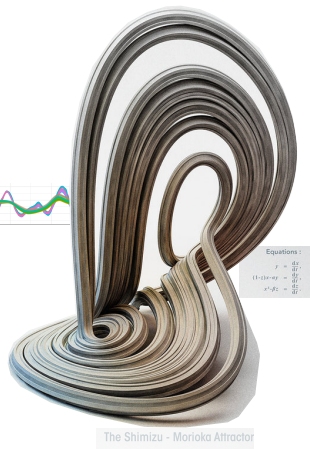
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Equations :

$$\begin{aligned} \dot{x} &= \frac{dx}{dt} \\ (1-x) \dot{y} &= \frac{dy}{dt} \\ x^2 \dot{z} &= \frac{dz}{dt} \end{aligned}$$

The Shimizu - Morioka Attractor



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