Re: Chaos, Measureing correlation dimension from experimental data.

Source: http://sci.tech−archive.net/Archive/sci.nonlinear/2005−04/msg00012.html

- *From*: "Stephen Harris" <cyberguard1048−usenet@xxxxxxxxx>
- *Date*: Tue, 19 Apr 2005 17:17:41 GMT

"Pavel Pokorny" <Pavel.Pokorny@xxxxxxxxxxxxxxxxxxxxxxx> wrote in message news:d2s96h$2amp$2@xxxxxxxxxxxxxxxxx
> Lou Pecora <pecora@xxxxxxxxxxxxxxxxx> wrote:
>> In article <d2qghm$7eq$1@xxxxxxxxxxxxxxxx>,
>> "Tal Carmon" <ta_l@xxxxxxxxxxx> wrote:
>
>> > Hello,
>> > I have a chaotic experimental system described by 4 differential
>> > equations.
>> > I am measuring the continuous time dynamics of 2 parameters.
>> >
>> > ***Can any of you direct me to a recipe(\algorithm\calculator) that
>> > starts
>> > with the experimental measurement and ends with correlation dimension
>> > and
>> > embedded dimension of my system?
>> >
>> > Thanks
>> > Tal
>
>> You might want to try the TISEAN package from Schreiber and Kantz
>> (http://ls11−www.cs.uni−dortmund.de/people/hermes/NLDdocs/docs/). You
>> should see their book on Nonlinear time series analysis.
>
>> Having said that I will give my usual warning that unless you know a lot
>> about your system and are rather sure of it's intrinsic dimensionality
>> and time scales you can easily get garbage from any code. Just
>> inputting data will certainly give you numerical answers, but you'll
>> have no way of knowing if they make sense or not.
>
> Having read that
> I would like to ask:
> has anyone considered the question of error estimate of the quantities
> (like Lyapunov exponents, dimension etc.)
> evaluated from experimental chaotic time series?
>
> −−

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>

Following Lou Pecora's suggestion I searched for this on the internet
and found: "Chaotic data analysis: Is it really any good?"
Eric Kostelich Arizona State University
http://www.fields.utoronto.ca/audio/01−02/dynamsys/kostelich/
has 18 slides and an audio presentation.

http://www.fields.utoronto.ca/audio/01−02/dynamsys/kostelich/index.html?18;onesize#slideloc
"There are not effective ways to quantify the reliability of time series
analysis of complex systems. (Yet)"

http://math.la.asu.edu/~eric/ Eric Kostelich homepage with email address
there

Regards,
Stephen

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- ***References***:
  - ♦ ***Chaos, Measureing correlation dimension from experimental data.***
    - ◊ *From:* Tal Carmon
  - ♦ ***Re: Chaos, Measureing correlation dimension from experimental data.***
    - ◊ *From:* Lou Pecora
  - ♦ ***Re: Chaos, Measureing correlation dimension from experimental data.***
    - ◊ *From:* Pavel Pokorny

- Prev by Date: ***which one is deterministic?***
- Next by Date: ***some basic questions on time series analysis***
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