Re: How Chapman−Kolmogorov implies Markov ??

Source: http://sci.tech−archive.net/Archive/sci.physics/2007−02/msg01746.html

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- *Date*: 10 Feb 2007 15:13:29 −0800

On 10 feb, 12:37, "Edward Green" <spamspamsp...@xxxxxxxxxxx> wrote:

> On Feb 9, 7:56 am, "rayoha...@xxxxxxxxxxxx" <juanp...@xxxxxxxxx>
> wrote:
>
> > It's easy to see that a stochastic process that follows the Markov
> > property, then follows the Chapman−Kolmogorov equation. But the visce
> > versa holds too, and I can find a proof of that. Some one of you can
> > show me a proof ??
>
> Before you fade back into obscurity, perhaps you would help me
> understand the question.
>
> Starting with
>
> http://en.wikipedia.org/wiki/Chapman−Kolmogorov_equation
>
> I run into some conceptual problems. An "indexed set of random
> variables" is almost an empty concept, being, I suppose, a set of
> random variables each identified with an associated element of an
> index set. Perhaps the notation "f_i" is supposed to imply there is
> something equivalent about all of these random variables, though what
> this is is undefined. Identical marginal distributions?
>
> Now, when we begin labeling a set of the indexes, "i_1, i_2, ...,
> i_n", I get lost. We have in mind again, of course, an almost empty
> concept, that we index the index set iself, or else write a finite
> sequence in it, explicitly using the integers as our indices.
>
> It occurs to me now (for the first time? well... experience is
> infinite/life finite), that indexing a set by the integers and writing
> a sequence in it are related but distinct concepts: the sequence may
> reuse elements, while indexing implies a one−to−one relation −− we
> don't say "oh, x_3 and x_7 are the same variable... did I forget to
> mention that"?
>
> Which is intended?

> Anyway, I get the feeling, not unknown in mathematical arguments, that
> the formal exposition has run ahead of the sense −− the author knows
> what he is trying to capture, I don't! Rather than trying to reverse
> engineer his intentions through the ambiguities, would you possibly be
> so kind as to fill in story?
>
> Please assume I am just sophisticated enough to understand the
> intention, though not conversant with it.
>
> (P.S. Thanks for posting a real question, anyway)

sorry for my notation ... i will try to be more clear ... it´s just
dificult to do it in text mode ...

definition:

p_(k|r)(y_1 , t_1 ; ... ; y_k , t_k | y_(k+1) , t_(k+1) ; ... ; y_(k
+r) , t_(k+r))

is the conditional probability that SVs (stochastic variables)
Y_1 , ... , Y_k gives values
y_1 , ... , y_k at respectives times t_1 , ... , t_k if SVs Y_(k
+1) , ... , Y_(k+r) gives values
y_(k+1) , ... , y_(k+r) at respectives times t_(k+1) , ... , t_(k+r)

also

p_n(y_1 , t_1 ; ... ; y_n , t_n)

is the joint probability that SVs Y_1 , ... , Y_n
gives values y_1 , ... , y_n at times
t_1 , ... , t_n

thanks
best regards

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