Bayesian estimation of structured correlation/covariance

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Hi,

I have a problem that comes from VLSI that I've been wrestling with −
and I was hoping someone would tell me if I'm going in the right
direction.

Essentially, there are many delay elements that have are normally
distributed − and I have an assumed structured correlation matrix for
these delay elements − in the simplest case, suppose I have the
symmetric, positive−definite correlation matrix symbolically and the
only values allowable are {1,0,p}

I would like to apply bayesian parameter estimation for the unknown
variable given measurements.
The issue is, I cannot directly measure the delay elements, I can only
measure path delays − which are sums of various delay elements.

If I'm only allowed to measure a single path, I can proceed fairly
straightforwardly with estimating an unknown variance of a gaussian
distribution with a chi−square distribution − in which I can formulate
the variance as function of p.

Of course, I can measure several paths, so from what I've read, I
should formulate this as covariance matrix estimation with the Wishart
distribution.

I'd prefer correlation estimation which I understand from a bivariate
angle with the Fisher transform − but from what I've read from
discussion in this group, the multivariate case gets quite nasty.

Any comments or advice would be greatly appreciated,
thanks,
Ben Lee

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- ***Follow−Ups***:
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    - *From:* David Jones

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