

Re: complex orthogonal group

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- *From:* Ilya Zakharevich <nospam-abuse@xxxxxxxx>
 - *Date:* Tue, 4 Oct 2005 05:48:40 +0000 (UTC)
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[A complimentary Cc of this posting was sent to Tobias Fritz <tfritz@xxxxxxxxxxxxxxxx>], who wrote in article <Pine.LNX.4.62.0510032230470.13099@xxxxxxxxxxxxxxxx>:

You send a "blind Cc" copy (as not marked as a copy of a posting). Now I need to copy my reply to you here. Please do not send blind Cc's.

>>Any good thorough book on linear algebra (i.e., designed not for
>>teaching students) will contain the spectral theorem over an
>>algebraically closed case.

> Though I have to admit that I did not check really thoroughly, I
> doubt that this is true. A key assumption in the proof of the
> standard (finite-dim) spectral theorem for normal operators is that
> the orthogonal complement of a subspace has trivial intersection
> with that subspace; this fails for the C^n case, since it has null
> vectors.

The conclusion of the complex spectral theorem is different (comparing to the positive real case). As I said, in addition to 1x1 Jordan block (as in real positive case) larger blocks can appear.

But each block has (in addition to its size) exactly one parameter: the eigenvalue – exactly as in the real positive case.

Hope this helps,
Ilya

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- *References:*
 - ◆ **complex orthogonal group**
 ◇ *From:* Tobias Fritz
 - ◆ **Re: complex orthogonal group**
 ◇ *From:* Ilya Zakharevich
 - ◆ **Re: complex orthogonal group**

Re: complex orthogonal group

◇ *From:* Tobias Fritz

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