Difficult integral − who can help?

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- *Date*: 22 Jul 2005 03:29:33 −0700

Hello together,

[I posted this already on sci.math, but perhaps you are more familier
with this type of problem. So sorry for cross−posting,. but the problem
is quiet urgent :−( ]
]
During my calculations for a physical problem I derived the following
integral that must be solved:

Integral[z]:=

\int_{−\infinity}^{z} dz' Exp[−i \pi (z'^2 − i \alpha z')] *
\int_{−\infinity}^{z'} dz'' Exp[+i \pi (z''^2 − i \alpha z'')]

As you see its a double−integral.

Please note:

z is real
i = \sqrt(−1)
\alpha is real and also \alpha > 0

I solved the integral for z=\infinity. So I have Integral[\infinity]
which gives 1/2.

But I also need Integral[z]. I asked lots of people and tried some
tricks, but nothing worked for this integral.

Perhaps you can help.

Thanks a lot!!!

Bye,
Mark

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