

Re: How real are the "Virtual" particles?

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Eugene Stefanovich wrote:

Arnold Neumaier wrote:

When the S-matrix is calculated,
we use the Hamiltonian expressed in terms of bare particles
and we take the initial and final states formed as $a^*b^*\dots|0\rangle$
where a^* , b^* , etc are the same operators of bare particles, and
 $|0\rangle$ is bare vacuum.

No. This is only the unrenormalized, meaningless version.
The renormalized, physical version is about the behavior of
physical, dressed states.

Why you call this version meaningless?

unrenormalized = meaningless,
renormalized = physical.

Arnold Neumaier