Contribution ID: **149** Type: **Poster presentation**

Nonperturbative corrections and hypothesis of vacuum dominance

Wednesday 7 September 2022 19:10 (20 minutes)

In this work we check the range of values which quark condensate can take, basing on our method: processing of experimental data on e^+e^--annihilation into even number of pions (BaBar, CMD-2, OLYA) by constructing the Adler function in two ways (through dispersion representation and through the OPE series), applying the Borel transform, compiling the sum rule, and extracting of nonperturbative corrections.
We check the hypothesis of vacuum dominance, and a possibility of other intermediate states, contributing to four-quark condensate.
How other nonperturbative corrections (C_2 and C_4 or gluon condensate) change when the additional contribution of intermediate states is taken into account?
It is shown that values of quark condensate that are not more than 1.2 times higher than the average obtained value, which corresponds to the available data, but not 2 or 1.5 times, are acceptable.
In this case, C_4 takes values close to the previously known ones, while C_2 is compatible to zero or negative.

Is this abstract from experiment?

No

Name of experiment and experimental site

N/A

Is the speaker for that presentation defined?

Yes

Details

Marina Kozhevnikova, IUPAP/JINR

Internet talk

No

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Session Classification: Poster Session

Track Classification: Workshops: Workshop on QCD