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S-parameter and vector decay constant in QCD with eight fundamental fermions

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SU(3) gauge theory with eight massless fundamental fermions seems to be near the conformal boundary, and is a candidate of walking technicolor. Along the series of study by LatKMI collaboration using HISQ fermions, S-parameter and vector decay constant, which provide important constraints in the model building, are calculated for this theory. Use of various volumes allows a systematic investigation of finite volume effect, where a strong sensitivity on the S-parameter is found.

Primary authors: SHIBATA, Akihiro (KEK); Dr BENNETT, Ed (Swansea University); Dr RINALDI, Enrico (Lawrence Livermore National Laboratory); Dr OHKI, Hiroshi (RIKEN); NAGAI, Kei-ichi (KMI, Nagoya University); MIURA, Kohtaroh (CPT Marseille); YAMAWAKI, Koichi (KMI, Nagoya University); Dr KURACHI, Masafumi (KEK); YAMAZAKI, Takeshi (University of Tsukuba); AOYAMA, Tatsumi (KMI, Nagoya University); MASKAWA, Toshihide (KMI, Nagoya University); AOKI, Yasumichi (KMI, Nagoya University)

Presenter: AOKI, Yasumichi (KMI, Nagoya University)

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