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p –> e+ gamma in LCSR framework

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Proton decay is a baryon number violating process and hence is forbidden in the Standard Model (SM). Baryon number violation is expected to be an important criteria to explain the matter anti-matter asymmetry of the universe. Any detection of the proton decay will serve as a direct evidence of physics beyond the SM. In SMEFT, proton decay is possible via baryon number violating dimension six operators.
In this work, we have considered the proton decay to a positron and a photon, which is expected to be an experomentally cleaner channel because of less nuclear absorption. The gauge invariant amplitude of this process involves two form factors (FFs). We present these FFs in the framework of light cone sum rules (LCSR).

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