



Contribution ID: 3

Type: **Parallel-Goldstone Boson**

## Theoretical analysis of the doubly radiative decays

$$\eta^{(\prime)} \rightarrow \pi^0 \gamma \gamma \text{ and } \eta' \rightarrow \eta \gamma \gamma$$

The scalar and vector meson exchange contributions to the doubly radiative decays

$$\eta^{(\prime)} \rightarrow \pi^0 \gamma \gamma \text{ and } \eta' \rightarrow \eta \gamma \gamma$$

are analysed within the Linear Sigma Model and Vector Meson Dominance frameworks, respectively.

Predictions for the diphoton invariant mass spectra and the associated integrated branching ratios are given and compared with current available experimental data.

While a satisfactory description of the shape of the  $\eta \rightarrow \pi^0 \gamma \gamma$  and  $\eta' \rightarrow \pi^0 \gamma \gamma$  decay spectra is obtained, thus supporting the validity of the approach, the corresponding branching ratios cannot be reproduced simultaneously. A first theoretical prediction for the recently measured  $\eta' \rightarrow \eta \gamma \gamma$  by the BESIII collaboration is also presented.

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