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The May 2024 flare sequence: a rich opportunity for QPP analysis

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Monster active regions 13663 and 13664 produced not less than 18 X-class solar flares between May 3 and May 15, before rotating out of view from Earth. Despite this, AR 13664 continued to exhibit significant activity, generating numerous events observed by instruments onboard the Solar Orbiter mission. This extraordinary sequence of strong flares not only delighted sky watchers with remarkable auroras but also provides valuable data for the analysis of Quasi-Periodic Pulsations (QPPs).

These flares were recorded by various instruments across multiple spectral ranges and from different vantage points. Some flares were associated with coronal mass ejections (CMEs), filament eruptions, or solar energetic particles (SEPs), and were observed both on-disk and at the solar limb. This dataset presents a unique opportunity to investigate the influence of flare characteristics on QPPs.

In this study, we analyze QPP observations from several solar missions, including GOES, PROBA2, Solar Orbiter, SDO, to investigate if the general trend of QPPs also holds for this serie of very large flares.

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