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^{3}He rich periods measured by the Suprathermal Ion Telescope (SIT) on STEREO-A during solar cycle 24

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^{3}He-rich solar energetic particle (SEP) events are characterized by a peculiar elemental composition with rare species like ^{3}He or ultra-heavy ions tremendously enhanced over the solar system abundances.
We report on ^{3}He rich SEP periods measured by the Suprathermal Ion Telescope (SIT) onboard STEREO-A beginning in 2007 until 2020, covering the whole solar cycle 24.
The mass resolution capabilities of SIT do not allow to easily distinguish between ^{3}He and ^{4}He especially in cases of a low ^{3}He to ^{4}He ratio.
We therefore developed a semi-automatic detection algorithm to find time periods during which a ^{3}He enhancement can be statistically determined.
Using this method we found 112 ^{3}He rich periods.
These periods were further examined in regards of their ^{3}He/^{4}He and Fe/O ratio.
Previously about ten ^{3}He-rich SEP periods measured by SIT on STEREO-A have been reported.
An association with in-situ electron measurements by STEREO-SEPT and STEREO-STE showed that ~60% of the 112 periods are accompanied with electron events.
The here presented catalogue of ^{3}He rich periods is intended to serve as a reference for the community.