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Overview of interplanetary coronal mass ejections observed by Solar Orbiter, Parker Solar Probe, Bepi Colombo, Wind and STEREO-A

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We show in situ observations of ICMEs during the first year of Solar Orbiter observations based on magnetic field data from the MAG instrument in conjunction with in situ and imaging observations from the Heliospheric System Observatory. The in situ magnetic field data from four other currently active spacecraft - Parker Solar Probe, BepiColombo, STEREO-Ahead and Wind - are also searched for ICME signatures, and all clear ICME events that could be identified by classic signatures such as elevated and rotating magnetic fields of sufficiently long durations are included in a living online catalog. Furthermore, we provide a visualization of the in situ magnetic field data alongside spacecraft positions and propagating CME fronts, which are based on modeling of STEREO-A heliospheric imager data. This allows us to identify ICME events that could be unambiguously followed from their inception on the Sun to their impact at the aforementioned spacecraft, and highlights sought-after lineup events, in which the same ICME is observed at multiple points in space, such as the well-studied 2020 April 15-20 ICME. We discuss the ICME rate observed so far, and provide an outlook on the expected ICME rate in solar cycle 25 based on different forecasts for the cycle amplitude (see Möstl et al. 2020, <https://doi.org/10.3847/1538-4357/abb9a1>).