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## Studies of the global solar wind-magnetosphere system through soft X-ray imaging

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Soft X-ray emission produced by multi-charged solar wind ions exchanging charges with geocoronal neutrals is gaining momentum in studies of the solar wind-magnetosphere interaction. This is attested by the increased interest in missions dedicated in imaging the global magnetospheric system in soft X-rays, such as ESA's SMILE and NASA's LEXI missions. The former will launch in 2025, and the later will be deployed on the Moon's surface in 2024. I will present recent modeling efforts, using MHD and test-particle simulations, to study the SWCX (Solar Wind Charge-exchange X-ray) emission in the Earth's magnetosheath, and support the science return of magnetospheric soft X-ray imagers.

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