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Mercury's exosphere-magnetosphere-surface relations

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Up to the next Messenger and Bepi Colombo missions to Mercury, the only information to be expected concerning Mercury's exosphere will be related to its sodium component. Actually, since Mariner 10 flybies of Mercury, most of the studies and observations of Mercury's exosphere have concerned the bright sodium exospheric emissions. Since its first observation by Potter et al. (Nature, 1986), several observations underlined the significant spatial and temporal variabilities of Mercury's sodium exosphere. Such observations lead to suggest a large number of potential sources of ejection of the sodium atoms from Mercury's surface, but also strong relations between Mercury's exosphere and its magnetosphere as well as strong relations between Mercury's exosphere and Mercury's upper surface. In this talk I will give an overview of the different debated conclusions concerning the putative relations between Mercury's exosphere/magnetosphere and upper surface and will underline how the understanding of Mercury's sodium exosphere helps us, at present, to better conceive Mercury's environment, thanks to the deep magnetosphere/exosphere/upper surface relations.