Accretion onto selected magnetic white dwarfs as seen in X-rays

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Magnetic cataclysmic variables of AM Her type comprise an accreting white dwarf with a strong magnetic field. Under its influence, the accretion stream is channeled along the field lines towards the poles of the white dwarf, preventing the formation of an accretion disk and allowing for direct insight into the accretion regions. Due the high temperatures developing in the accretion process, a considerable fraction of the total emission is found at X-ray energies: In the hard X-ray regime ($E \sim 0.5 - 10.0\,\mathrm{keV}$), we see emission from the material which is decelerated above the white-dwarf surface; and in the soft X- and far ultraviolet regime ($E < 0.5\,\mathrm{keV}$), from the heated photosphere, where the hard emission is reprocessed. A significantly large group of AM Her systems have been found to emit almost entirely at X-ray energies below 0.5 keV. These systems could play an important role in interpreting the energy balance of polars. We perform dedicated XMM-Newton observations to study the spectral components, their flux contributions, and the physical structure of the accretion region of several AM Her systems selected by their distinct soft X-ray fluxes. Modeling the spectral signature of these system components requires an approach to the complex and still widely unknown temperature structure in accretion column and accretion region, which we approximate with multi-temperature white-dwarf and plasma models. We present the current status of our models and analyses of the three binaries which have been observed within our campaign up to now.