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Parsing the WHIM

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We examine the structure of the warm/hot intergalactic medium (WHIM) in order to obtain clues to the formation history of this potentially substantial baryon reservoir. A better understanding of the physical properties and extent of this component is garnered by progressing beyond its threshold-based definition. We use a new algorithm to find and extract clumpy, tubular, and sheet-like structures in a large scale hydrodynamical simulation. The entropy, density profile and temperature distribution of the WHIM are obtained for these well-defined samples. The predicted temperature-density phase diagram for the intergalactic medium (IGM) is discussed. The results are used to tackle lingering questions about the portion of the WHIM in groups/clusters vs. the filamentary network, the formation mechanisms of the different components of the IGM, and consequently the very definition of the WHIM.