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Sommario/riassunto	This open access book presents the main results of the Collaborative Research Center SFB-TRR 75, which spanned the period from 2010 to 2022. Scientists from a variety of disciplines, ranging from thermodynamics, fluid mechanics, and electrical engineering to chemistry, mathematics, computer science, and visualization, worked together toward the overarching goal of SFB-TRR 75, to gain a deep physical understanding of fundamental droplet processes, especially those that occur under extreme ambient conditions. These are, for example, near critical thermodynamic conditions, processes at very low temperatures, under the influence of strong electric fields, or in situations with extreme gradients of boundary conditions. The fundamental understanding is a prerequisite for the prediction and optimisation of engineering systems with droplets and sprays, as well as for the prediction of droplet-related phenomena in nature. The book includes results from experimental investigations as well as new analytical and numerical descriptions on different spatial and temporal scales. The contents of the book have been organised according to methodological fundamentals, phenomena associated with free single

drops, drop clusters and sprays, and drop and spray phenomena involving wall interactions.