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Sommario/riassunto	This Special Issue is a compilation of the recent advances in thermal fluid engineering related to supercritical CO2 power cycle development. The supercritical CO2 power cycle is considered to be one of the most promising power cycles for distributed power generation, waste heat recovery, and a topping cycle of coal, nuclear, and solar thermal heat sources. While the cycle benefits from dramatic changes in CO2 thermodynamic properties near the critical point, design, and analysis of the power cycle and its major components also face certain challenges due to the strong real gas effect and extreme operating conditions. This Special Issue will present a series of recent research results in heat transfer and fluid flow analyses and experimentation so that the accumulated knowledge can accelerate the development of this exciting future power cycle technology.