Monte-Carlo simulations of $su(2)$ symmetric deconfined criticality action\textsuperscript{1} A.B. KUKLOV, CSI, CUNY, M. MATSUMOTO, Universite Paul Sabatier, Toulouse ; ETH Zurich , N.V. PROKOF'EV, UMASS, Amherst; ETH Zurich; Kurchatov Institute, Moscow, B.V. SVISTUNOV, UMASS, Amherst; Kurchatov Institute, Moscow, M. TROYER, ETH Zurich — We discuss results of Monte Carlo simulations of $su(2)$ symmetric deconfined criticality action in $\mathbb{C}P^1$ formulation proposed by T. Senthil,et. al, Science 303, 1490 (2004). Using high-temperature expansion we reformulate the partition function in terms of J-currents. The resulting configuration space is explicitly $su(2)$ symmetric. Critical behavior in the region of possible deconfined critical point (DCP) is addressed by the flow method [A.B.Kuklov, et.al., Annals of Physics 321,1602(2006)] mapping critical properties of a system with small values of the gauge interaction $g$ at large sizes to a system with large $g$ and small sizes. We observe data collapse on a single master curve with the flow toward fluctuation induced I order transition. The unlikely possibility of existence of the lower tricritical point separating I order transitions from the DCP line is assessed in terms of disruption of the flow collapse.

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