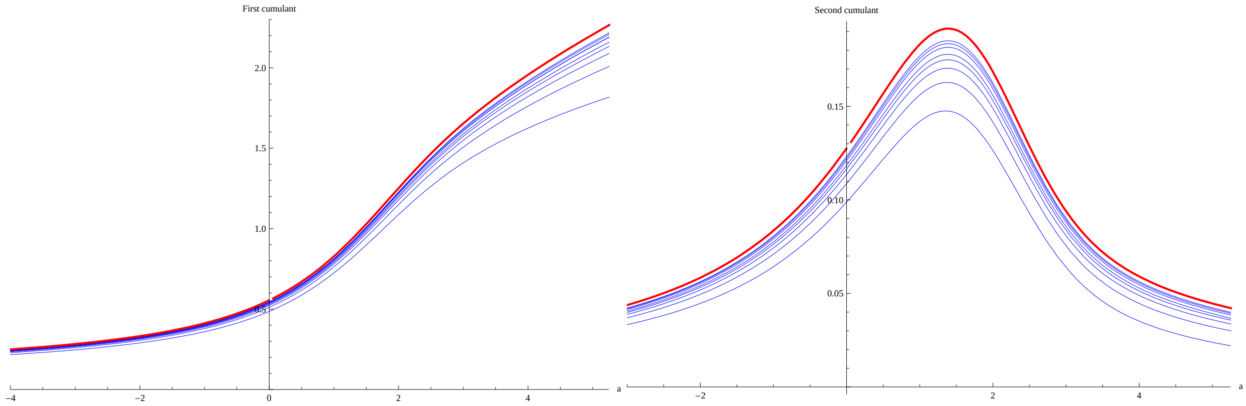

FIG. 22: Normalised first (left) and second (right) cumulants for the $L \times L \times L \times L \times L$-lattice, $L = 4, 6, 8, 10, 12, 16, 20, 24$ (blue) versus a for $z = -9.87$ together with the limit curve (red).

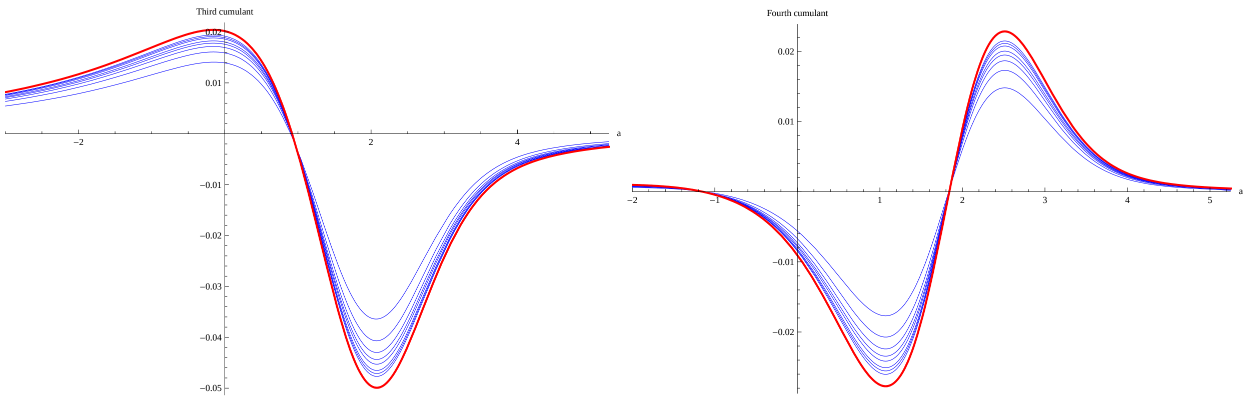

FIG. 23: Normalised third (left) and fourth (right) cumulants for the $L \times L \times L \times L \times L$-lattice, $L = 4, 6, 8, 10, 12, 16, 20, 24$ (blue) versus a for $z = -9.87$ together with the limit curve (red).

denote by $a_{\min}(z)$ and $a_{\max}(z)$ the location of the minimum and maximum fourth cumulant. For $z = -9.87$ we have $a_{\min} \approx 1.06965$ and $a_{\max} \approx 2.51275$. A simple scaling projection gives that roughly $K_{\max}(L) \approx K_c + 0.22/L^{5/2}$ and $K_{\max}(L) - K_{\min}(L) \approx 0.093/L^{5/2}$. Also $K_c \approx 0.113915$, see[24]. Thus, in principle at least, the rescaling between a and K is

$$K(a) \sim \frac{K_{\max}(L) - K_{\min}(L)}{a_{\max}(z) - a_{\min}(z)} \left(a - a_{\max}(z)\right) + K_{\max}(L) \tag{153}$$

However, this kind of expression is somewhat too simplistic to get figure 23. It would take higher-order corrections to scaling to produce it but this would probably take a more involved numerical study of the 5D-model. Other investigations of the 5D-lattice includes e.g.[11],[25] and[24].