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Title: Diophantine equations involving normalized binomial mid-coefficients

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For a positive integer n , let μ_n be the normalized binomial mid-coefficients. We discuss the following Diophantine equation involving power means of n variables μ_i ,

$$M_k(\mu_{a_1}, \dots, \mu_{a_n}) = M_l(\mu_{b_1}, \dots, \mu_{b_n}), \quad k, l \in \mathbb{Z}.$$

For $n = 2, 3$ and other general cases, we get some results on this equation. Moreover, for $k = l = 0$ and for every $n \geq 3$, we obtain infinitely many solutions of equation $\mu_{a_1} \mu_{a_2} \cdots \mu_{a_n} = \mu_{b_1} \mu_{b_2} \cdots \mu_{b_n}$.

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