Degeneracy theorems for meromorphic mappings of complete Kähler manifolds sharing hyperplanes in projective spaces

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Abstract. Let M be a complete Kähler manifold, whose universal covering is biholomorphic to a ball $\mathbb{B}^m(R_0)$ in $\mathbb{C}^m$ $(0 < R_0 \le +\infty)$. In this article, we will show that if three meromorphic mappings f^1, f^2, f^3 of M into $\mathbb{P}^n(\mathbb{C})$ $(n \ge 2)$ satisfy the condition (C_ρ) and share q $(q > C + \rho K)$ hyperplanes in general position regardless of multiplicity with certain positive constants K and $C < 2n$ (explicitly estimated), then there are some algebraic relations between them. A degeneracy theorem for the product of k $(2 \le k \le n+1)$ meromorphic mappings sharing hyperplanes is also given. Our results generalize the previous results in the case of meromorphic mappings from $\mathbb{C}^m$ into $\mathbb{P}^n(\mathbb{C})$.

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