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WEIGHTED SHARING OF SETS ON THE CARDINALITY OF THE UNIQUE RANGE SETS FOR MEROMORPHIC AND ENTIRE FUNCTIONS

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Abstract: The present paper deals with the study on cardinality of unique range sets of meromorphic(entire) functions. By using the concept of weighted sharing of sets, we prove one result which greatly improves the result stated in [3].

Keywords and Phrases: Meromorphic (Entire) function, URSM(URSE), Weighted sharing of sets.

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1. Introduction and Main Results

In the literature, by a meromorphic function we mean that the function has singularities as its poles only, in the whole complex plane $\mathbb{C}$. For the standard notations and results in Nevanlinna theory, the reader can refer the book by W. K. Hayman (see [11]).

We now discuss the necessary definitions and notations used in the paper.

Definition 1.1. ([18]) *For a non-constant meromorphic function f and any set $S \subset \mathbb{C} \cup \{\infty\}$, we define*

$$E_f(S) = \bigcup_{a \in S} \{(z,p) \in \mathbb{C} \times \mathbb{N} \mid f(z) = a \text{ with multiplicity } p\},$$

$$\overline{E}_f(S) = \bigcup_{a \in S} \{(z,1) \in \mathbb{C} \times \mathbb{N} \mid f(z) = a \text{ with multiplicity } p \text{ or } 1\}.$$