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CERTAIN ROGERS-RAMANUJAN TYPE MULTI SUM IDENTITIES AND RATIO OF INFINITE PRODUCTS

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Abstract: Some Rogers-Ramanujan type multi sum identities can be expressed in terms of infinite products. In this paper, an attempt has been made to establish the certain results involving the multi summation expressions and ratio of infinite products by using well known m dissections of the power series.

Keywords and Phrases: Ratio's of infinite products, Bailey pair's, Bailey lemma, Rogers-Ramanujan type multi sum identities.

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1. Introduction

The $m-$ dissection of the power series $P = \sum_{n=0}^{\infty} a_n q^n$ is the representation of P as $p = p_0 + P_1 + ... + P_{m-1}$, where $P_k = \sum_{n=0}^{\infty} a_{mn+k} q^{mn+k}$ Andrews [2] and Hirschhorn [7] have given the 2 dissection and 5 dissection of the continued fraction $C(q)$ and