International Journal of Computing Algorithm, *Vol 1(1), June 2012*
ISSN(Print):2278-2397

A New Computer Oriented Technique to Solve Sum of Ratios Non-Linear Fractional Programming Problems

R.Ramesh Babu*, S.Divyaa devi+, V.Palanisamy#

* Department of Computer Science &Engineering, Alagappa University, Karaikudi, India
+ Department of Computer Science & Engineering, Anna University of Technology Madurai, Dindigul Campus, Dindigul, India.
#Department of Computer Science & Engineering, Alagappa University, Karaikudi,India.
E-mail: svmr_babu@yahoo.com

Abstract

Normally the sum of ratios problems are reduced into a sequence of single-ratio problems and then solved by existing methods. Because of their combinatorial nature, the computational complexity grows exponentially. A sum of non-linear fractional function optimization problem with several fractions is proved to be a NP-complete problem indicating that an efficient algorithm may not exist. The non-linear sum of fractional functions are linearized by piecewise linearization technique and converted into a linear sum of fractional programming problem. Optimal solution is found at for the new problem. The number of iterations depends on the contribution of decision variables to objective function value.