

## عنوان مقاله:

A Modified Four-Coefficient Model for Plus Fraction Characterization of a Supergiant Gas Condensate Reservoir

## محل انتشار:

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## خلاصه مقاله:

Properties and chemical composition of plus fraction in a petroleum fluid have a considerable impact on the fluid phase behavior. Understanding the trend of changes in molecular weight of successive single carbon number (SCN) groups in a plus fraction requires an accurate and reliable distribution function. Different distribution function models proposed so far may be applicable for certain types of reservoir fluids. In this work, analysis of ۳۰ representative fluid samples in a supergiant gas condensate reservoir indicated a discontinuity in molecular weights of SCN groups at  $SCN=۸$ , and  $SCN=۱۳$ . The exponential, gamma, four-coefficient, and modified four-coefficient distribution functions were applied to these samples to predict the composition of SCN components. Results showed that the exponential distribution function does not predict the distribution of SCN composition accurately, especially in the aforementioned compositional discontinuities. Furthermore, the gamma distribution function was successful in predicting the jump in  $SCN=۸$  but failed at  $SCN=۱۳$ . On the other hand, the modified four-coefficient model did predict the jumps in both  $SCN=۸$  and  $SCN=۱۳$ . The overall error of calculations was ۳۷.۱۹%, ۱۲.۰۴% and ۱۰.۷۱% for exponential, gamma and modified four-coefficient models. Comparing four-coefficient and modified four-coefficient prediction results showed that the model parameters are strongly dependent on the fluid nature and need to be optimized based on available field data.

## کلمات کلیدی:

Gas condensate, plus fraction, Distribution Function, four-coefficient model

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<https://civilica.com/doc/1823942>



