

ABSTRACT

A method for closing a recycle stream in a process simulation includes: S1: obtaining an initial value of a feed stream and an initial value of a recycle stream (S1); S2: obtaining, based on the initial value of the feed stream and the initial value of the recycle stream, deviation values of all streams (S2); S3: receiving a relaxation factor, taking the deviation value of the stream as a previous-round deviation value, and obtaining, based on the relaxation factor and the previous-round deviation value, a current-round deviation value and a current-round connection equation (S3); S4: combining the current-round connection equation with a first equation set to form a system of simultaneous equations, and solving the system of simultaneous equations; if a convergence condition is satisfied, then receiving a new relaxation factor, taking the current-round deviation value as a new previous-round deviation value, and obtaining, based on the new relaxation factor and the new previous-round deviation value, a new current-round deviation value and a new current-round connection equation; if the convergence condition is not satisfied, then receiving a new relaxation factor, and obtaining, based on the new relaxation factor and the previous-round deviation value, a new current-round deviation value and a new current-round connection equation (S4); and S5: repeating S4-S5 until the new current-round deviation value is 0 (S5).

Fig. 1 for publication