microscopic reversibility at equilibrium

The principle of microscopic reversibility at equilibrium states that, in a system at equilibrium, any molecular process and the reverse of that process occur, on the average, at the same rate. This definition corresponds to the statement of the principle that was given by R.C. Tolman in 1924. However, many workers have interchanged the meanings of microscopic reversibility and detailed balance, and it seems best now to regard the two, which are closely related, as synonymous.

Source:

PAC, 1996, 68, 149 (A glossary of terms used in chemical kinetics, including reaction dynamics (IUPAC Recommendations 1996)) on page 173