We present a new method for obtaining of a bounds for the distance in total variation between the distribution of
the regenerative process and its stationary distribution.

This method is based on a “direct” coupling of the regenerative process and its stationary version. The first step in
this method is an estimation of convergence rate of the backward renewal time of a renewal process with a non-discrete
distribution of the renewal time. The second step is an estimation of convergence rate of the distribution of backward
renewal time for an alternating renewal process with a non-discrete distribution of at least one of its renewal times.
Then the bounds obtained for the alternating renewal process can be applied to the delayed regenerative process in
the case where the regeneration period can be split in two parts like the alternating renewal process.

Bounds of convergence rate for regenerative processes can be used for estimation of the convergence rate of different
numerical characteristics of a Queueing System.