According to the simple OTOR model:

$$I \sim F_1(D/D_{63\%},\ R) \tag{1}$$

where the function F_1 is defined by:[1]

$$F_1(D/D_{63\%},\ R) \equiv 1 + \frac{1}{(1-R)} \mathcal{W}\left\{-(1-R)\exp\left[-\left(1-\frac{e-1}{e}(1-R)\right)D/D_{63\%}-(1-R)\right]\right\} \tag{2}$$

For the special case of $R = 1$, the above reduces to:[2]

$$F_1(D/D_{63\%},\ 1) = 1 - \exp\left(-D/D_{63\%}\right) \tag{3}$$

Thus, the SSE model is simply OTOR with R=1.

In the SAR model, luminescence intensities (L_x) are normalized by a intensities (T_x) of a test dose (D_T). Thus:

$$L_x/T_x = c\,\frac{F_1(D/D_{63\%},\ R)}{F_1(D_T/D_{63\%},\ R)} \tag{4}$$

All the physical constants in Eq. (4) have physical meaning:

- $D_{63\%}$ is the dose at which OSL intensity reaches 63% of saturation. (This is like b is the SSE model.) It is proportional to, among other things, the trap concentration.
- R is the ratio of the recombination to retrapping rate constants.
- c tests the validity of the SAR model. If SAR is perfect, then c=1. In practice, typically $c = 1 \pm 0.1$. If, for some material, c differs strongly from 1, then SAR is possibly not appropriate for that material.

[1] I am using F_1 here instead of simply F so that this function, which uses R as an argument, is not confused the one in the paper that uses Q.

[2] Note that Eq. (2) is singular as $R \rightarrow 1$. A lot of math (not shown) is required to go from Eq. (2) to Eq. (3).