```
> mek := unapply( simplify( α·exp( - α/(tanh(β) + 1)/2 ·t ) ), α, β, t );
    #modified exponential kernel
```

$$mek := (\alpha, \beta, t) \mapsto \alpha\, e^{-\frac{2\,\alpha\, t}{\tanh(\beta)+1}} \tag{1}$$

```
> simplify( int( mek(α, β, t), t = 0..infinity) );
    # the branching ratio is a single parameter now
```

$$\frac{\tanh(\beta)}{2} + \frac{1}{2} \tag{2}$$

```
> coulditbe( tanh(x)/2 + 1/2 > 1 ) assuming x :: real;
```

$$false \tag{3}$$

```
> coulditbe( tanh(x)/2 + 1/2 > 1 ) assuming x :: complex;
```

$$true \tag{4}$$

```
> int( mek(alpha, beta, t), t = 0..infinity) = tanh(beta)/2 + 1/2; is(%);
```

$$\alpha\left(\frac{\tanh(\beta)}{2\,\alpha} + \frac{1}{2\,\alpha}\right) = \frac{\tanh(\beta)}{2} + \frac{1}{2}$$

$$true \tag{5}$$

```
>
```