Supplement to 'Evaluating models of autoregressive conditional duration' by Mika Meitz and Timo Teräsvirta

In this supplement we briefly summarize the results of the size simulations of our test statistics when instead of (43) the data generating process is

$$
\begin{aligned}
x_i &= \psi_i \varepsilon_i \\
\psi_i &= 0.05 + 0.09 x_{i-1} + 0.90 \psi_{i-1} \\
\varepsilon_i &\sim \text{ i.i.d. } \exp(1).
\end{aligned}
\qquad (43^*)
$$

Otherwise the simulation exercise is identical to the one in Section 6.1 of our paper. The size discrepancies of our test are given in Figure 2*. Comparing them with the results in Figure 2 of the paper (note the different scale on the y–axis) indicates that the size distortions with the data generating processes (43) and (43^*) are of the same magnitude. The only notable exception is the increase in the actual size for the test against the ACD(1,2) alternative.

Figure 2[*]: Results from size simulations of the tests. In the figures the size discrepancy (i.e. the actual size less the nominal size) is plotted against the nominal size. Both of them are measured in percentage points. Performed tests are the tests against ACD(2,1) and ACD(1,2) models, tests of no remaining ACD (of order one) in the standardized durations, and tests of no smooth transition ACD of orders one and two. Both the ordinary and robust versions of the tests are used. The three lines in each subfigure correspond to sample sizes 1000 (+), 5000 ($\times$) and 10000 ($*$).