

**LTCC MEASURE-THEORETIC PROBABILITY EXAM, March
2019**

Q1. Show that, with pairwise independence (not full independence), variances add (over summands).

Q2. Show that the direct half of the SLLN holds under pairwise independence (full independence is not needed).

Q3. Why should we not expect the converse half of the SLLN to hold in such cases (even though its proof is simpler)?

Q4. As stated in lectures, strongly dependent errors need not cancel. Give a real-life example to illustrate this.

NHB