Probability with Martingales booklet by Alain Chenier, page 1 of 2, 23rd April 2017

- 1 **Proof**:  $E\left\{\sum_{0}^{\infty} X_{i}^{+}\right\} = \sum_{0}^{\infty} \left\{E(X_{i}^{+})\right\}$  1.  $\sum_{1}^{N} E(X_{i}) = E(\sum_{1}^{N} X_{i})$  for all N

2.  $|\sum_{1}^{N} X_i| \rightarrow |\sum_{1}^{\infty} X_i|$ 

3. Now abs conv. implies conv. so