# Random equations and identities

May 9, 2018

## Chapter 5

$\mathcal{R}(AB) = R(A)$ if $B$ is an invertible matrix.
Riesz basis condition implies the invertibility of the Gram matrix (footnote of FSP page 94).
Finite geom series:

$$\sum_{k=a}^{b} t^k = \begin{cases} \frac{t^a - t^{b+1}}{1-t} & \text{for } t \neq 1 \\ b - a + 1 & \text{for } t = 1 \end{cases} \tag{1}$$

## Approximations

- **Edgeworth series** are used to approximate a probability distribution in terms of its cumulants.
- **Gram-Charlier series** very similar to Edgeworth series.