Time Series Project 1

Stefan Eng

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1 Introduction

[1]

Problem 5

Part a

$$
\begin{aligned}
E[X_t] &= E[\cos(\omega t + Y)] \\
&= E[\cos(\omega t)\cos(Y) - sin(\omega t)sin(Y)] && \text{Sum-difference for cos} \\
&= \cos(\omega t)E[\cos(Y)] - sin(\omega t)E[sin(Y)] \\
&= \text{TODO: Find dist. of cos(Y) and sin(Y)}
\end{aligned}
$$

References

[1] Peter J. Brockwell and Richard A. Davis. *Introduction to Time Series and Forecasting*. Springer, 3rd edition, 2016.