

V-ARIMA Time Series Toolbox.

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The V-ARIMA Time Series Toolbox is the latest research in time series theory in the industry. The toolbox, which is meant for use with the textbook *The ARIMA and VARIMA Time Series: Their Modelings, Analyses and Applications*, consists of 83 MATLAB m functions. The functions are listed below.

General V-ARMA time series functions.

acorgram - Autocorrelogram.
aggregat - Aggregate time series model.
arid - AR model identification.
armaaspc - ARMA autospectrum.
armaid - ARMA model identification.
armavar - ARMA variance.
armaxspc - ARMA cross-spectra.
autocov - Autocovariance.
coquadsp - Co and quadrature spectra.
covarmat - Covariance matrix.
crosscov - Cross-covariance.
crssarma - Create S.S. ARMA model.
crtfarma - Create T.F. ARMA model.
differns - Differenced ARIMA polynomial.
diophan - Diophantine equation.
extrmfrq - Extremal frequencies.
filterts - Filter time series data.
forecast - Forecast V-ARMA values.
gendetts - Generate a deterministic T.S..
genperid - Generate random periodic data.
gensinew - Generate sine wave data.
genvarma - Generate V-ARMA data.
isstotf - Innovations S.S. to T.F..
maid - MA model identification.
mautocov - Matrix autocovariance.
mcroscov - Matrix cross-covariance.
mdiophan - Matrix Diophantine equation.
mdlcarma - Linear combination V-ARMA model.
mparfrac - Matrix partial fraction.
mresidu0 - Matrix residue at zero pole.
msamspec - Matrix sample spectra.
mspecfac - Matrix spectral factorization.
mspecsep - Matrix spectral separation.
normarma - Normalize V-ARMA model.
parsichk - Parsimony check.
perigram - Periodogram.
powerspc - Power spectrum.
powerval - Power spectrum value.
predict - Prediction of the state vector.
residu0 - Residue at the zero pole.

rkalman - Recursive Kalman filters.
samcovar - Sample covariances.
samspec2 - Sample spectra of 2 T.S..
samxspec - Sample cross-spectra.
sg2varma - Self-generated to regular.
sgvarma - Regular to self-generated.
skalman - Steady state Kalman filters.
skiparma - Skipped V-ARMA model.
sparfrac - Partial fraction.
specfac - Spectral factorization.
specsep - Spectral separation.
sstoiss - S.S. to innovations S.S..
sstotf - S.S. to T.F. model.
stablchk - Stability check.
statists - Statistics of T.S. data.
tftoiss - T.F. to innovations S.S..
varid - VAR model identification.
varmaasp - VARMA autospectrum.
varmaid - VARMA model identification.
varmaxsp - VARMA cross-spectra.
vmaid - VMA model identification.
whitnois - Generate white noise.
wpowspec - Windowed power spectrum.
xcorgram - Cross-correlogram.

Application functions.

bjiovars - Box-Jenkins I/O variances.
bjlqgcon - Box-Jenkins LQG controller.
bjmvcon - Box-Jenkins MV controller.
fspectra - Digital filter spectra.

Utility functions.

adjpoly - Adjoint polynomial.
detpoly - Determinant polynomial.
downrlsq - DOWndating L.S..
gcdpoly - Greatest common divisor.
invspoly - Inverse polynomial.
lsq - Least squares.
matpolyt - Matrix polynomial transpose.
mconv - Multiply matrix polynomials.
mpdivide - Matrix polynomial division.
mpinvers - Inverse premultiplying factor.
mppost - Matrix postmultiplying factor.
mppre - Matrix premultiplying factor.
mpprunit - Matrix premultiplying unit.
truncate - Polynomial truncation.
uprlsq - UPdating recursive L.S..
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