

# ReadMe

## Files

These data are for use in learning the Bayesian Journey-to-crime routines that are described in Chapter 14. The coordinate system is longitude, latitude (spherical). While these data sets were based originally on real cases, random spatial error has been added to the coordinates to protect confidentiality. They should be used for tutorial purposes, not for research. The sample data include six data sets:

1. Test\_Bayesian\_Jtc\_routine.param – a CrimeStat parameter file that will load the Primary File, the Reference File, the journey-to-crime calibration file, and the observed origin-destination distribution.
2. Observed\_OD\_Distribution.dbf – a file of the number of 1996 crime trips from each of 533 origin traffic analysis zones (TAZ's) in Baltimore County, MD and the City of Baltimore, MD to each of 325 destination TAZ's in Baltimore County, MD.
3. Bayesian\_calibration\_file.dbf – a file of the offences committed by 88 serial offenders in Baltimore County, MD.
4. JtcFull.txt – a calibrate journey-to-crime file that is used to provide a prior probability estimate for the offender's residence location.
5. S14A – an offender who committed 14 offences and who was discussed in Chapter 14.
6. TS15A – an offender who committed 15 offences and who was discussed in Chapter 14.
7. Baltimore County UCR codes.doc – a list of the UCR crime codes in use by Baltimore County Police Department

## Instructions for running the Bayesian journey-to-crime diagnostics routine:

1. Extract all files to a single directory.
2. Load the parameter file on the options page

3. On the Bayesian Journey-to-Crime Estimation page (under Spatial Modeling I), click on the 'Select serial offender calibration file' box and select the file called "Observed\_OD\_Distribution.dbf".
  - A. The origin X field is HOMEX
  - B. The origin Y field is HOMEY
  - C. The destination X field is INCIDX
  - D. The destination Y field is INCIDY
  - E. The ID field is ID
  - F. The coordinate system is longitude, latitude (spherical)
4. Click 'Compute' to run the diagnostics routine.

### **Instructions for estimating the origin location of the two offender datasets**

1. Load one of the two serial offender files (S14A or TS15A) as the Primary File.
  - A. The X coordinate is INCIDX
  - B. The Y coordinate is INCIDY
  - C. The coordinate system is longitude, latitude (spherical)
2. Define the Reference File
  - A. The lower-left X coordinate is -76.91
  - B. The lower-left Y coordinate is 39.19
  - C. The upper-right X coordinate is -76.32
  - D. The upper-right Y coordinate is 39.72
  - E. Define the grid by the number of columns and use the default 100.
3. On the Bayesian Journey-to-Crime Estimation page (under Spatial Modeling I), click on 'Use already-calibrated distance function' and load the calibration file JtcFull.txt.
4. On the same page, click on the 'Select serial offender calibration file' box and select the file called "Observed\_OD\_Distribution.dbf".
  - A. The origin X field is HOMEX
  - B. The origin Y field is HOMEY
  - C. The destination X field is INCIDX
  - D. The destination Y field is INCIDY

- E. The ID field is ID
  - F. The coordinate system is longitude, latitude (spherical)
5. Also on the Bayesian Journey-to-Crime Estimation page (under Spatial Modeling I), click on 'Estimate likely origin location of a serial offender. Select a method for modeling the likely origin of the offender. Hint: The product of  $P(Jtc)$  and  $P(O|Jtc)$  usually gives the best estimate.