Environmental Modeling
Homework #2
Due on Tuesday, September 18, 2012

Problem 1. Using the long-term average regional water balance equation given as follows:

$$m_{ET} = m_P - m_Q$$

where m_{ET}, m_P, and m_Q are long-term average ET, precipitation P, and stream flow Q, respectively, and assuming no model error,

(1) compute the long-term average ET, i.e, m_{ET}
(2) estimate the absolute and relative uncertainties in the estimated ET for the following basins:

Location	Connecticut River, USA	Yukon River, Canada	Euphrates River, Iraq	Mekong River, Thailand
Watershed area (km^2)	20370	932400	261100	663000
Precipitation, m_P (mm/yr)	1100	570	300	1460
Relative error in P, u_p	0.1	0.2	0.1	0.15
Streamflow m_Q (m^3/s)	386	5100	911	13200
Relative error in Q, u_Q	0.05	0.1	0.1	0.05