Subject: Re: Distance - geodesic - Vincenty - very accurate
Posted by nlneilson on Sun, 21 Mar 2010 09:41:19 GMT
View Forum Message <> Reply to Message

Mindtraveller wrote on Sun, 21 March 2010 08:44Cool.
What is the accuracy/drift of your calculations?

The Vincenty formulas are VERY accurate. With the Python code running it through a series of locations using the
Inverse formula and the returned values input to the Direct formula the result coincided usually to 10 decimal places
but did not exceed +/- 1 in the 9th decimal place. 9 decimal places is one billionth of a meter. The accuracy will not be
affected by the calculations. The accuracy of data input for locations, distance and starting angle, for all intent and
purposes, will determine the accuracy of the output.

The calculations are just math, no drift. Any "drift" would come from the input data.

Here is data on Tectonic Plate velocity or "drift"
http://hypertextbook.com/facts/ZhenHuang.shtml
using 5 cm per year
.05 / (365 * 24 * 60 * 60) = meters per second so the code
Distance<<=Format("m/sec %.9f", .05 / (365 * 24 * 60 * 60));
returns m/sec 0.000000002
2 in the 9th decimal place so it would take only 5 sec to make a
change in the 8th decimal place. 8 decimal places is the highest I have in the Distance app.