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(54) **COMPUTER-IMPLEMENTED SYSTEM AND METHOD FOR CORRELATING SATELLITE IMAGERY FOR USE IN PHOTOVOLTAIC FLEET OUTPUT ESTIMATION**

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CPC . ***G01W 1/12*** (2013.01); ***G06F 19/00*** (2013.01)

(58) **Field of Classification Search**
CPC combination set(s) only.
See application file for complete search history.

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(57) **ABSTRACT**

The calculation of the variance of a correlation coefficient matrix for a photovoltaic fleet can be completed in linear space as a function of decreasing distance between pairs of photovoltaic plant locations. When obtaining irradiance data from a satellite imagery source, irradiance statistics must first be converted from irradiance statistics for an area into irradiance statistics for an average point within a pixel in the satellite imagery. The average point statistics are then averaged across all satellite pixels to determine the average across the whole photovoltaic fleet region. Where pairs of photovoltaic systems are located too far away from each other to be statistically correlated, the correlation coefficients in the matrix for that pair of photovoltaic systems are effectively zero. Consequently, the double summation portion of the calculation can be simplified to eliminate zero values based on distance between photovoltaic plant locations, substantially decreasing the size of the problem space.

24 Claims, 26 Drawing Sheets