Method to detect environmental change for an arid land

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A method to detect natural environmental change for an arid land is developed based on 17 bands (Visible, NIR, SWIR and Thermal IR) ASTER (Advanced SpacebornThermal Emission and Reflection) radiometer aboard Terra and in situ ground truth survey in Taklimakan Desert. The method first extracts an area of macroscopic change then detailed or microscopic changes are detected. Although the procedure is described in two steps, the actual precessing is performed automatically and nearly simultaneously. The method is named as ECD (Environmental Change Automatic Discrimination model) method for the sake of convenience.