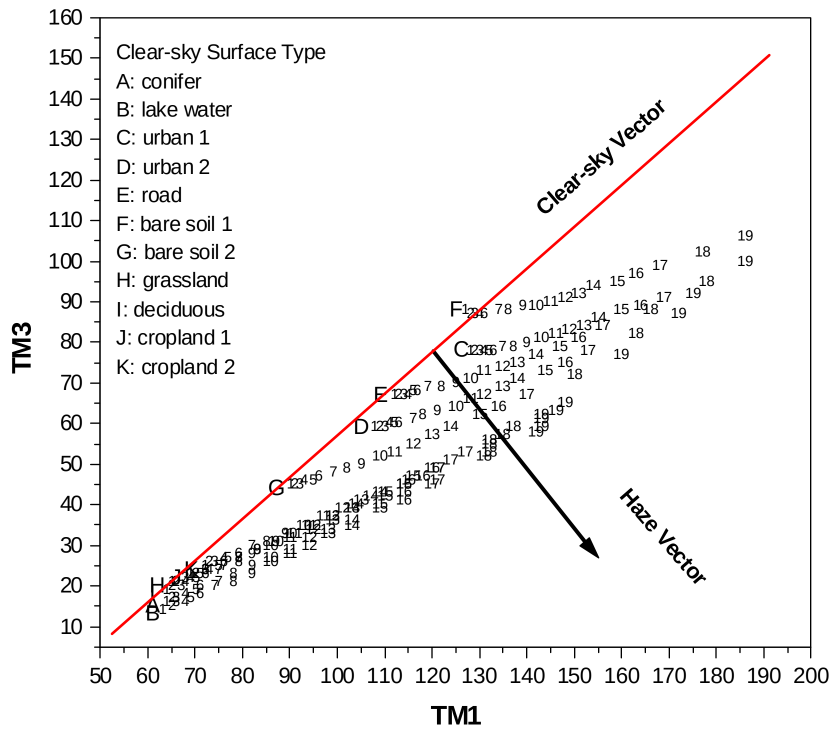

Schematic diagram of the TM1-TM3 spectral space illustrating the conceptual components of the haze optimized transform (HOT). Under clear sky conditions, radiances of common surface cover types, coded as A to H, exhibit high correlation and define a ‘clear line’ (CL). The effect of haze of increasing optical depth, illustrated by the numerical sequences 1 to 18, is to pixels to ‘migrate’ away from the clear line. The HOT quantifies the atmospheric contamination level at a pixel location by its perpendicular distance, in spectral space, from the clear line.

C:cases/graph27

Figure 1

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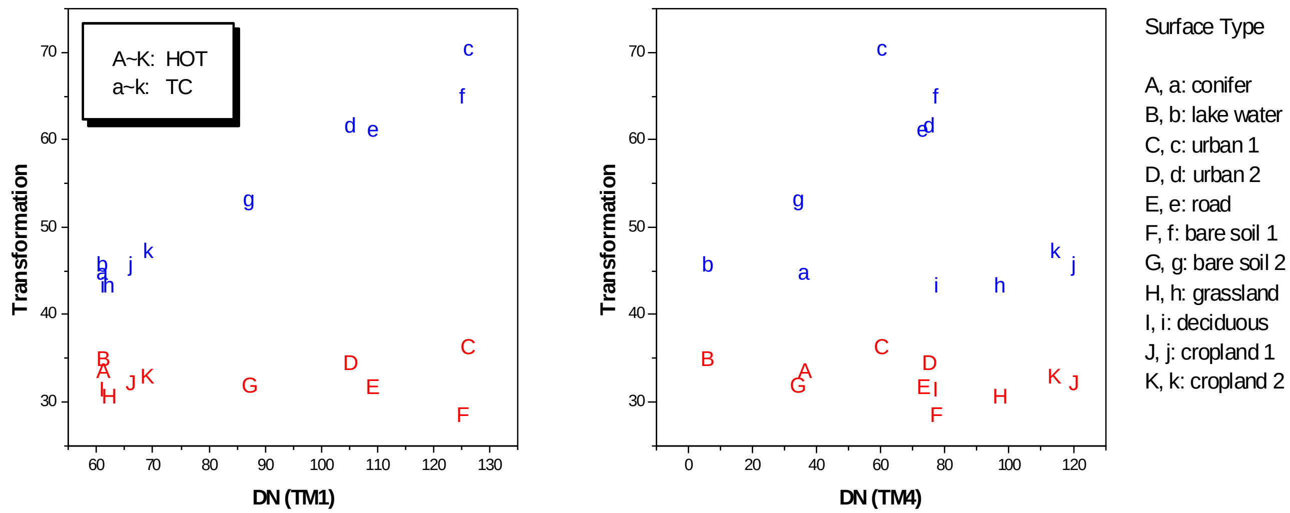

Model predictions of HOT (uppercase letters) and 4th Tasselled Cap (TC) transform (lower case letters) values for a mix of surface cover types exhibiting a range in visible reflectances. In both spectral bands, the HOT exhibits a higher degree of insensitivity to surface reflectance, suggesting that it will be more effective in isolating and quantifying atmospheric contamination in images than the TC transform.

C:cases/graph35

Figure 2

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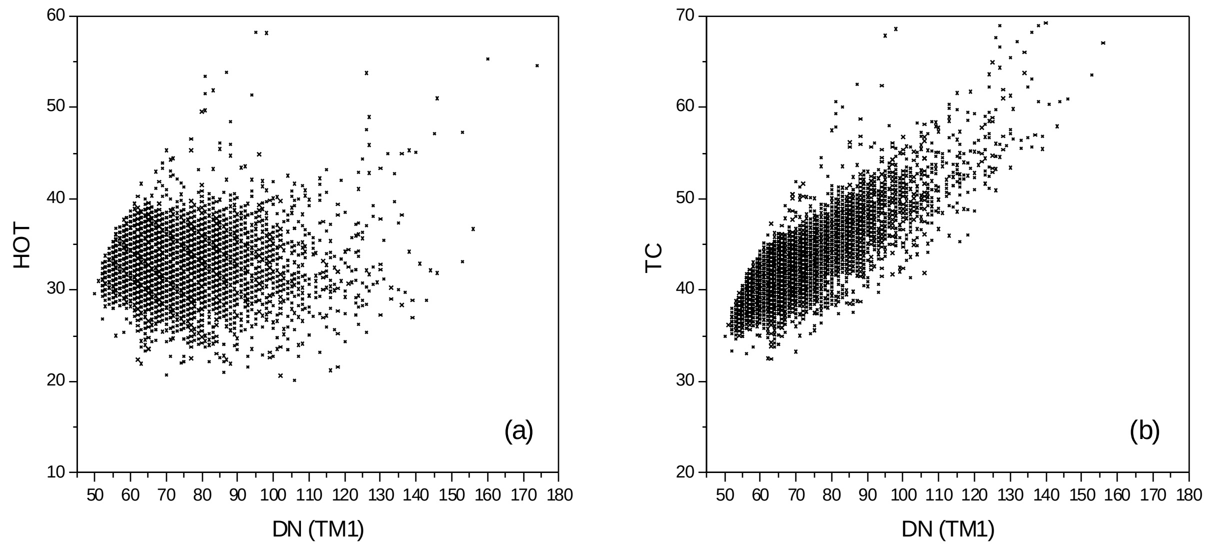

Scatterplots of HOT and TC transform values versus TM1 DN level for pixels selected from clear areas of TM scene P21/R26. The model prediction (see Figure 2) of the marked insensitivity of the HOT compared to the TC transform to surface reflectance is confirmed with real imagery.

D:cases/graph28

Figure 3

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