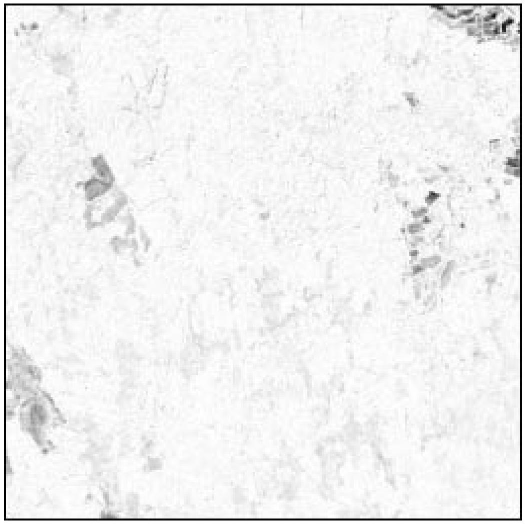

Figure 3.29: Sum of absolute value of MAFs 1 and 2 of Q-mode CVs 6

	$\sum\sum\Sigma_{Uij}$	$\sum\sum(\Sigma_{Uij})^2$	λ_{max}	λ_{min}	det $\mathbf{\Sigma}_U$
Sumcor	33.0725	30.4481	5.5125	0.0415	$2.3488\ 10^{-5}$
Ssqcor	33.0724	30.4482	5.5125	0.0414	$2.3347\ 10^{-5}$
Maxvar	33.0725	30.4482	5.5125	0.0415	$2.3448\ 10^{-5}$
Minvar	31.1882	27.2723	5.2038	0.0336	$1.0191\ 10^{-4}$
Genvar	32.9787	30.2877	5.4971	0.0371	$2.0069\ 10^{-5}$

Table 3.13: Optimization criteria for all five methods, R-mode

	$\sum\sum\Sigma_{Uij}$	$\sum\sum(\Sigma_{Uij})^2$	λ_{max}	λ_{min}	det $\mathbf{\Sigma}_U$
Sumcor	31.4870	28.0484	5.2730	0.0177	$1.2683\ 10^{-5}$
Ssqcor	31.4812	28.0566	5.2732	0.0167	$1.0872\ 10^{-5}$
Maxvar	31.4842	28.0562	5.2734	0.0171	$1.1480\ 10^{-5}$
Minvar	29.2292	24.9382	4.9373	0.0073	$1.6008\ 10^{-5}$
Genvar	30.6156	26.9877	5.1558	0.0078	$3.4272\ 10^{-6}$

Table 3.14: Optimization criteria for all five methods, Q-mode

3.3.3 Landsat TM Data in Forestry (MAD revisited)

The correlation structures shown in Figure 3.28 and described in page 125 indicate that vegetation related changes occurred from 1986 to 1988. Therefore this section gives a brief report of a MAD analysis of the Landsat TM data from 6 June 1986 and 27 June 1988. Figure 3.30 shows all six MADs (view with paper in landscape mode, row-wise from top-left is MAD1, MAD2, etc.). Again, we see that noise is a major difference between the two points in time but also the areas we have seen in the above multiset analysis stand out clearly in this analysis. This is also evident in the absolute values of the MADs, Figure 3.31.

Correlations between the MADs and the original variables given in Table 3.15 are generally quite low. However, the pattern revealed shows that MAD1 is associated with TM1, i.e. probably differences in atmospheric conditions. MAD4 is positively correlated with 1986 TM4 and negatively correlated with 1986 TM1, 2 and 3. The opposite correlation structure is true for MAD4 and the 1988 data. Therefore MAD4 is a sort of vegetation index change detector. With reverse signs for the correlations this is true for MAD5 also. MAD6 is a change detector of the (weighted) overall level.

A MAF transformation of the MADs is shown in Figure 3.32 and the correlations between the MADs and their MAFs are shown in Table 3.16. We see that low order MAFs (signal) are associated with high order MADs, i.e. maximum