0.1 Plots of single attributes

0.1.1 density

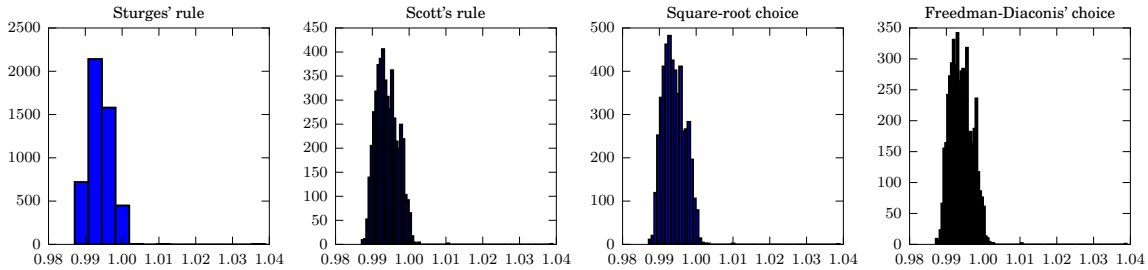

Figure 1: Histograms of attribute *density* using different binning methods

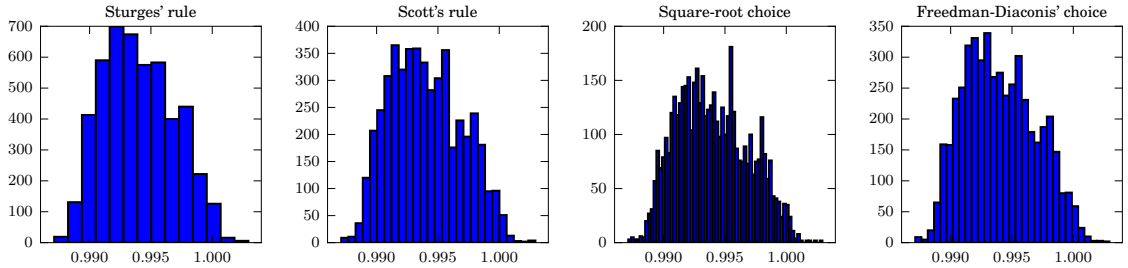

Figure 2: Histograms of attribute *density* with outliers further than 3 standard deviations from the mean filtered

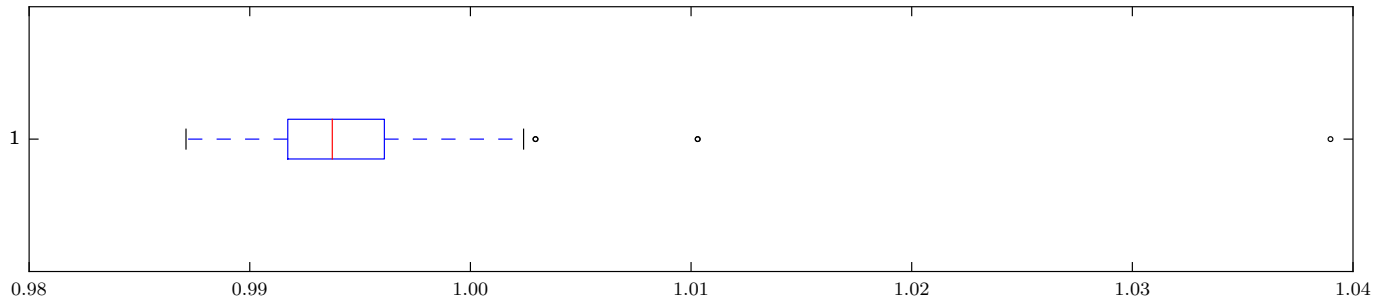

Figure 3: Boxplot of attribute *density*

0.1.2 residual sugar

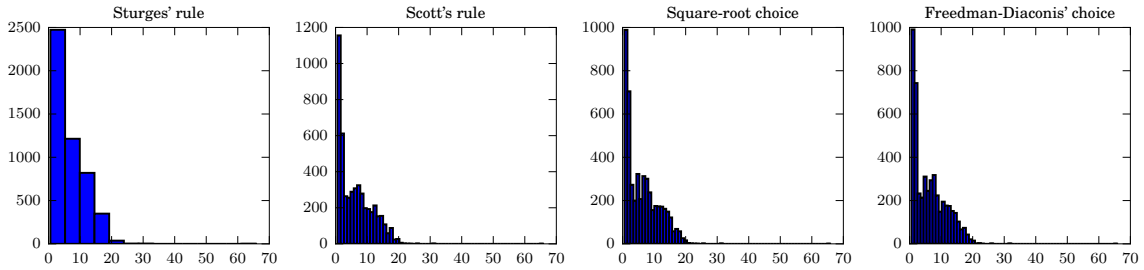

Figure 4: Histograms of attribute *residual sugar* using different binning methods

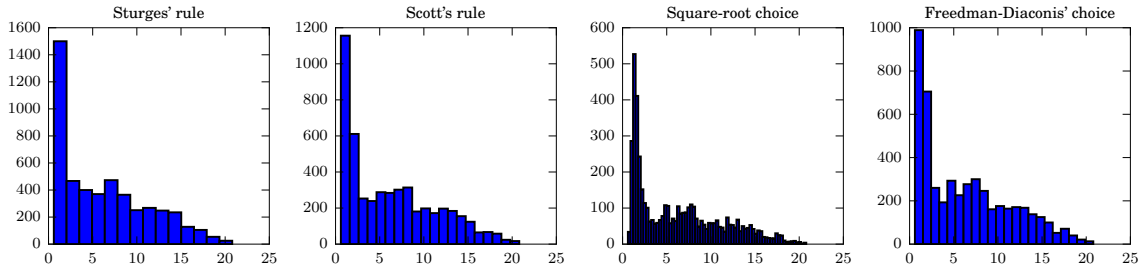

Figure 5: Histograms of attribute *residual sugar* with outliers further than 3 standard deviations from the mean filtered

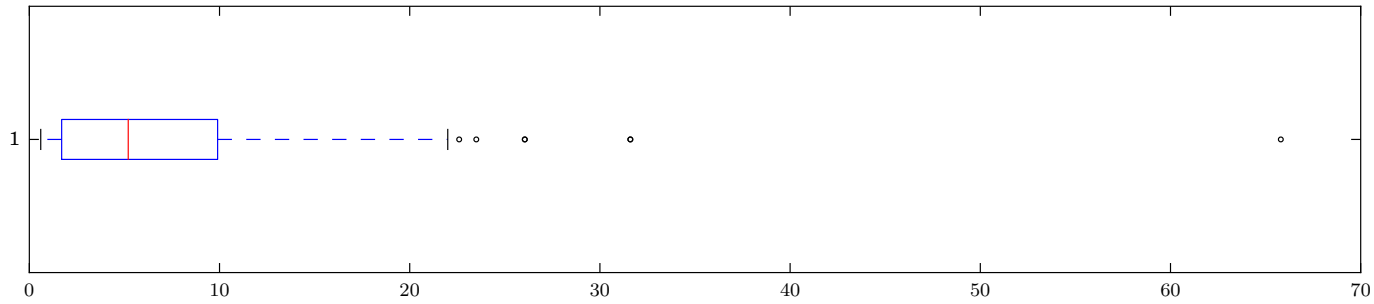

Figure 6: Boxplot of attribute *residual sugar*

0.1.3 citric acid

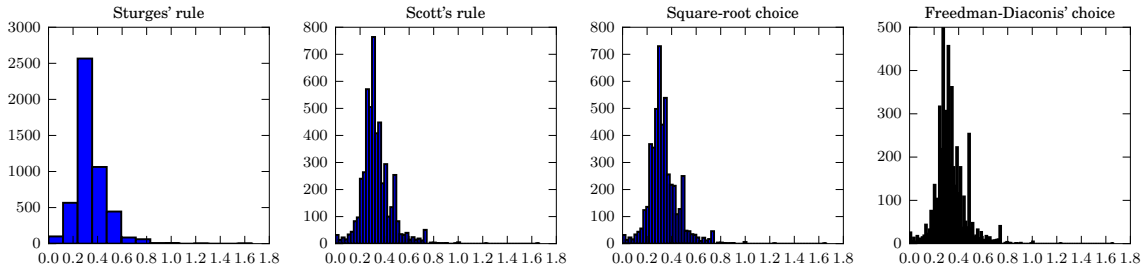

Figure 7: Histograms of attribute *citric acid* using different binning methods

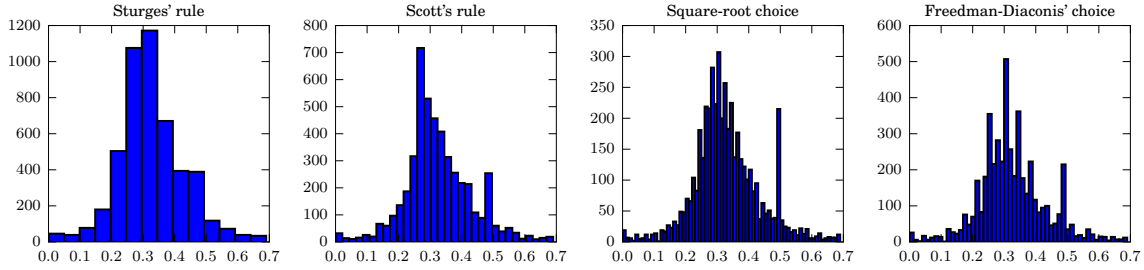

Figure 8: Histograms of attribute *citric acid* with outliers further than 3 standard deviations from the mean filtered

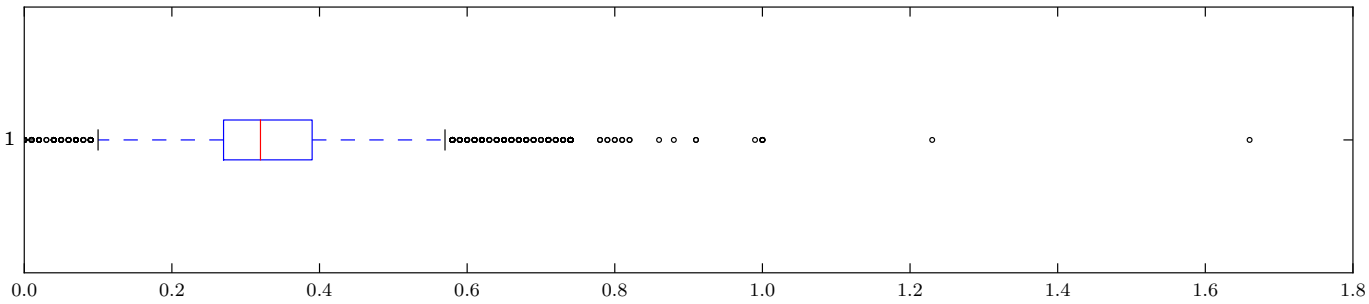

Figure 9: Boxplot of attribute *citric acid*

0.1.4 free sulfur dioxide

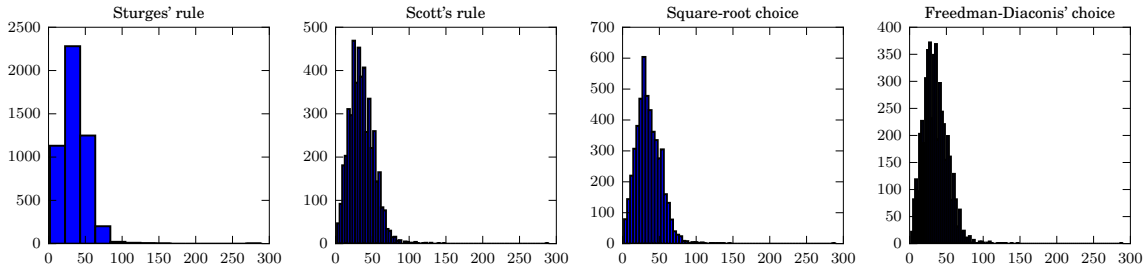

Figure 10: Histograms of attribute *free sulfur dioxide* using different binning methods

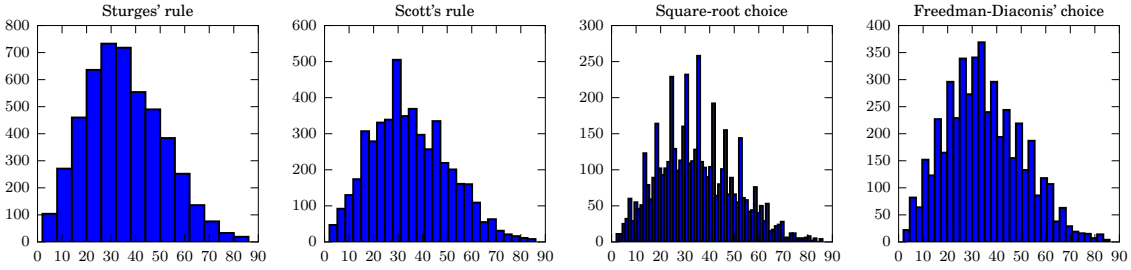

Figure 11: Histograms of attribute *free sulfur dioxide* with outliers further than 3 standard deviations from the mean filtered

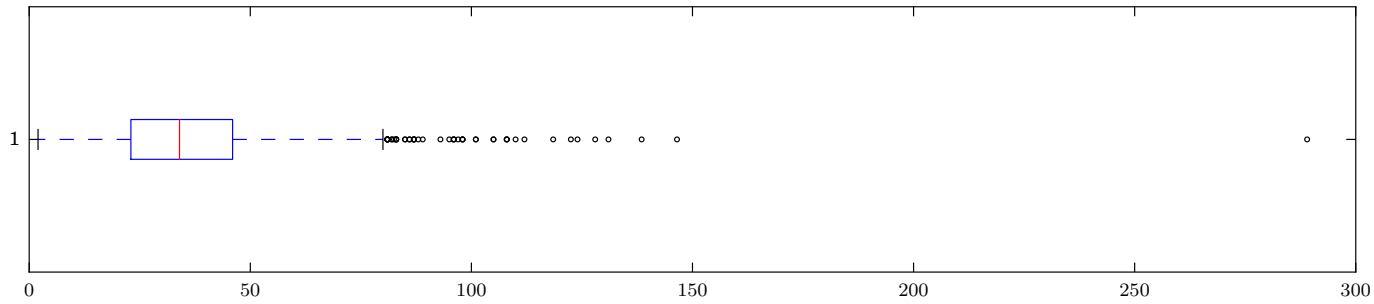

Figure 12: Boxplot of attribute *free sulfur dioxide*

0.1.5 alcohol

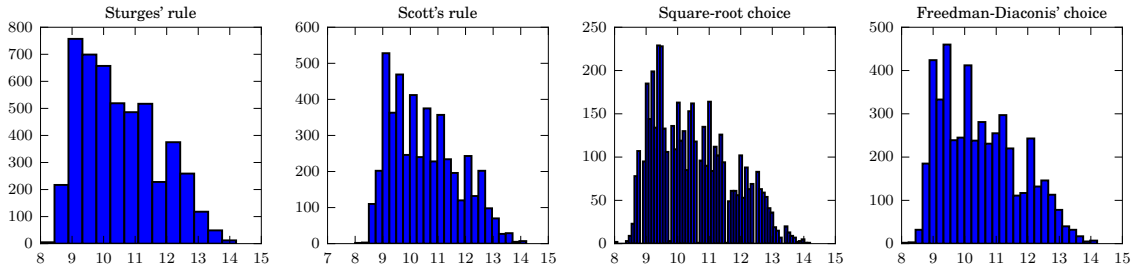

Figure 13: Histograms of attribute *alcohol* using different binning methods

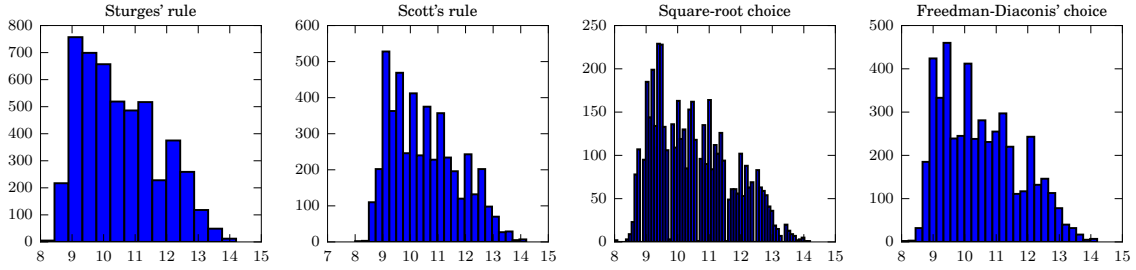

Figure 14: Histograms of attribute *alcohol* with outliers further than 3 standard deviations from the mean filtered

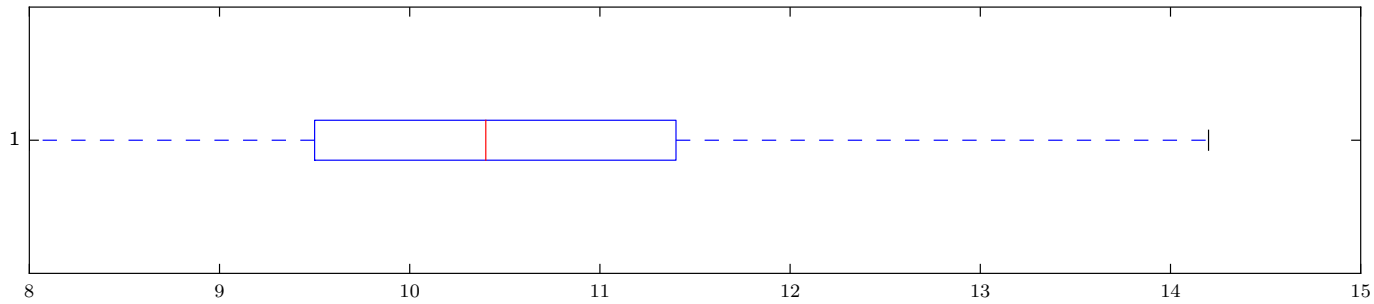

Figure 15: Boxplot of attribute *alcohol*

0.1.6 chlorides

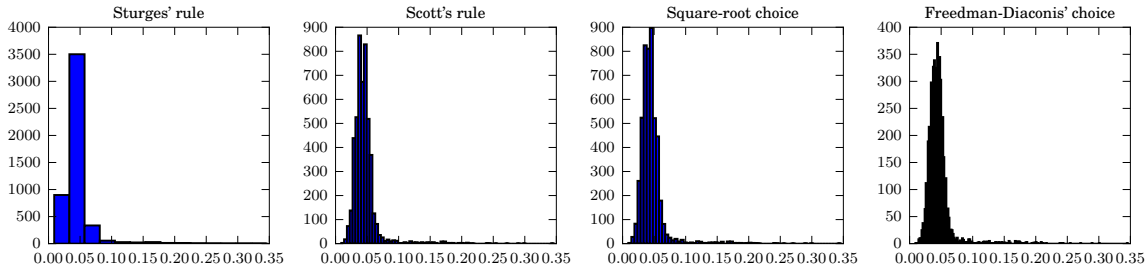

Figure 16: Histograms of attribute *chlorides* using different binning methods

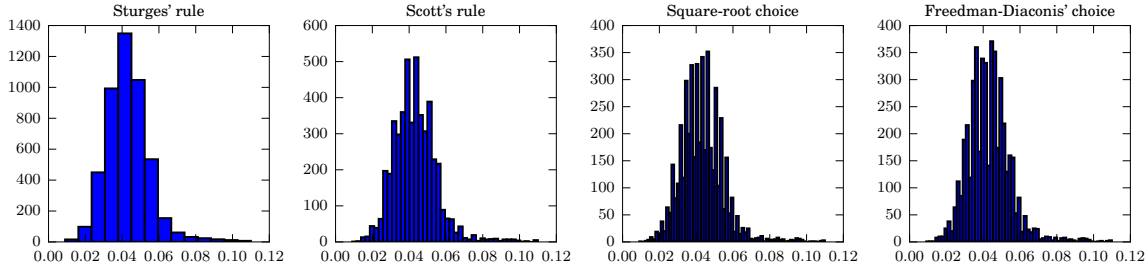

Figure 17: Histograms of attribute *chlorides* with outliers further than 3 standard deviations from the mean filtered

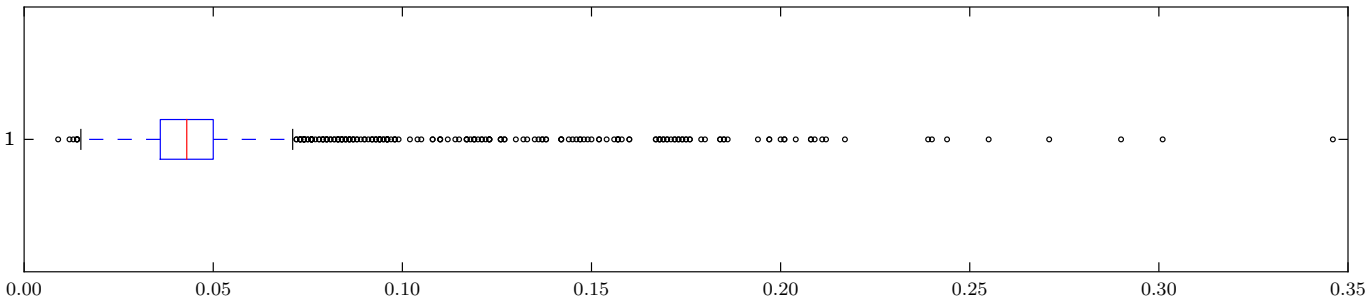

Figure 18: Boxplot of attribute *chlorides*

0.1.7 pH

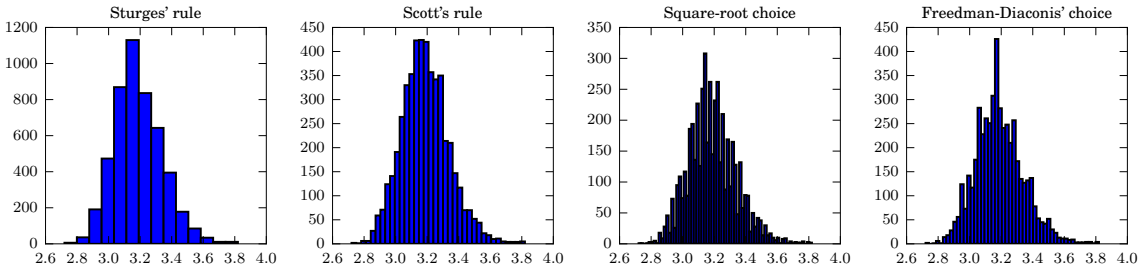

Figure 19: Histograms of attribute *pH* using different binning methods

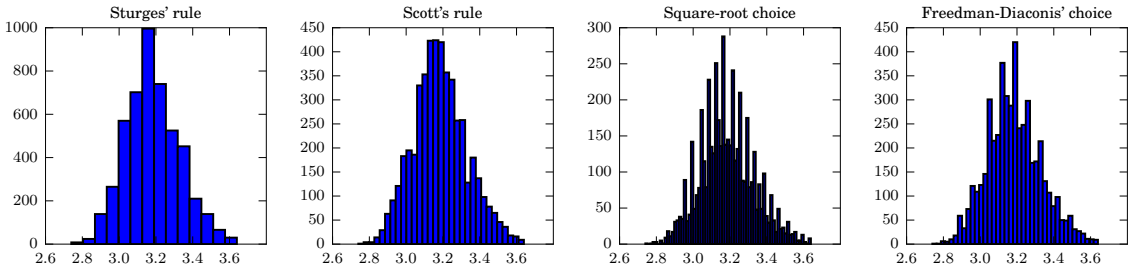

Figure 20: Histograms of attribute *pH* with outliers further than 3 standard deviations from the mean filtered

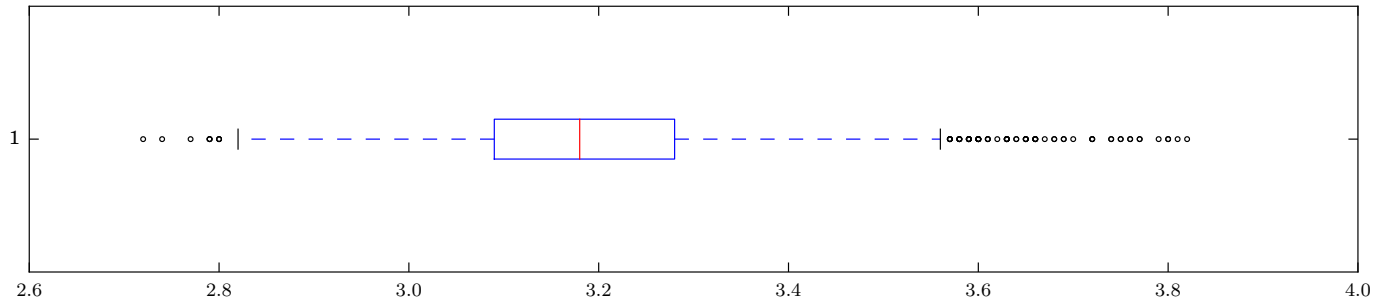

Figure 21: Boxplot of attribute *pH*

0.1.8 volatile acidity

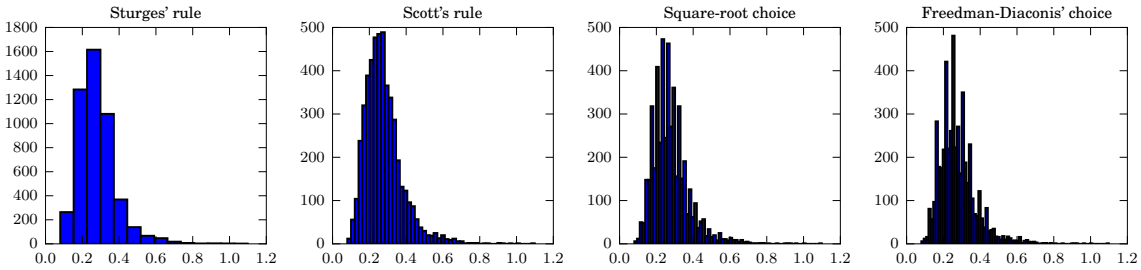

Figure 22: Histograms of attribute *volatile acidity* using different binning methods

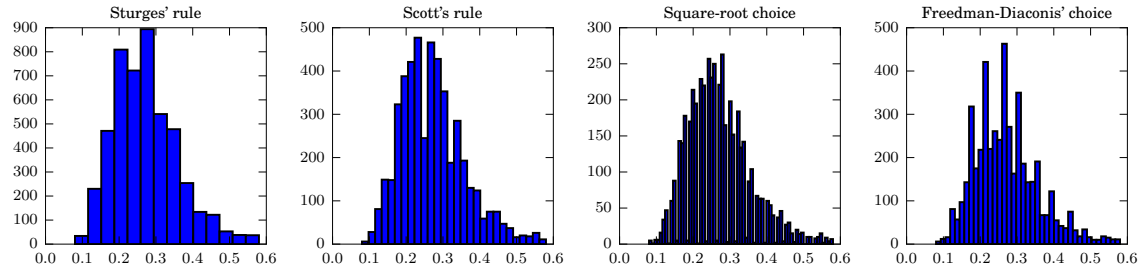

Figure 23: Histograms of attribute *volatile acidity* with outliers further than 3 standard deviations from the mean filtered

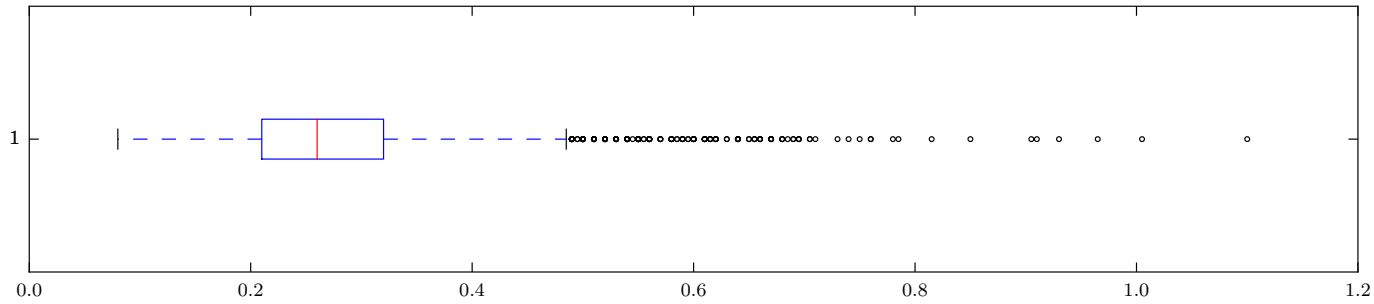

Figure 24: Boxplot of attribute *volatile acidity*

0.1.9 quality

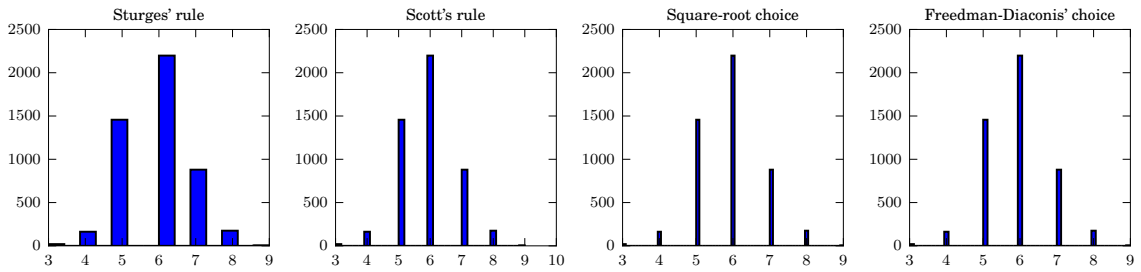

Figure 25: Histograms of attribute *quality* using different binning methods

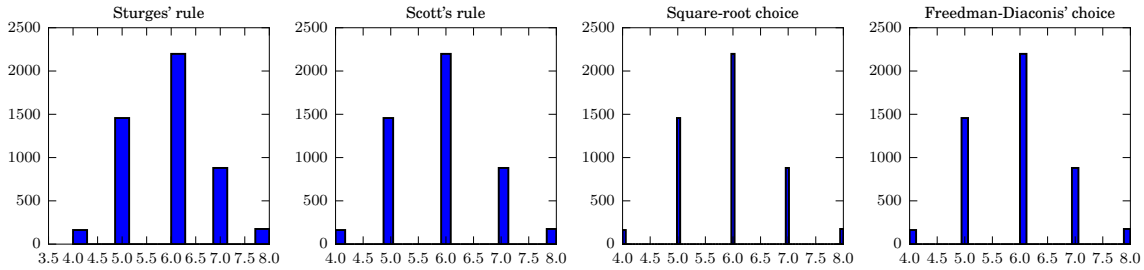

Figure 26: Histograms of attribute *quality* with outliers further than 3 standard deviations from the mean filtered

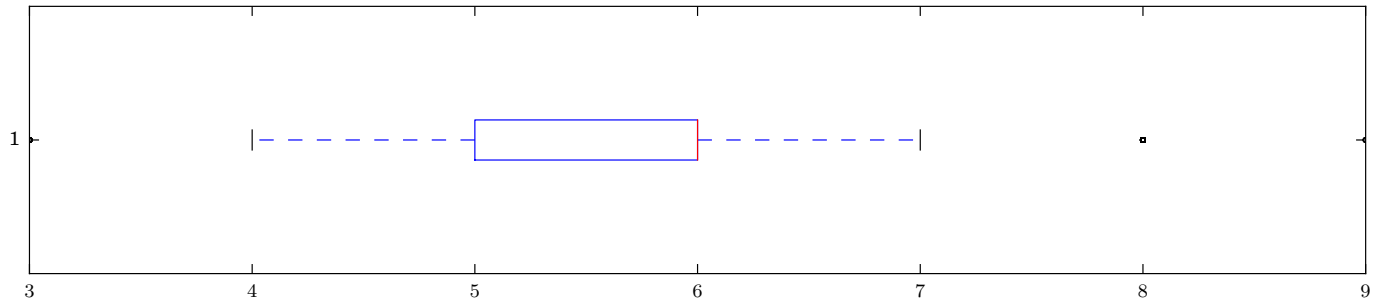

Figure 27: Boxplot of attribute *quality*

0.1.10 total sulfur dioxide

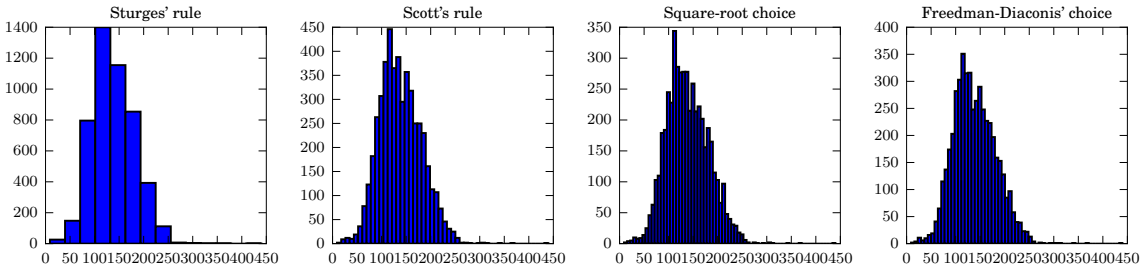

Figure 28: Histograms of attribute *total sulfur dioxide* using different binning methods

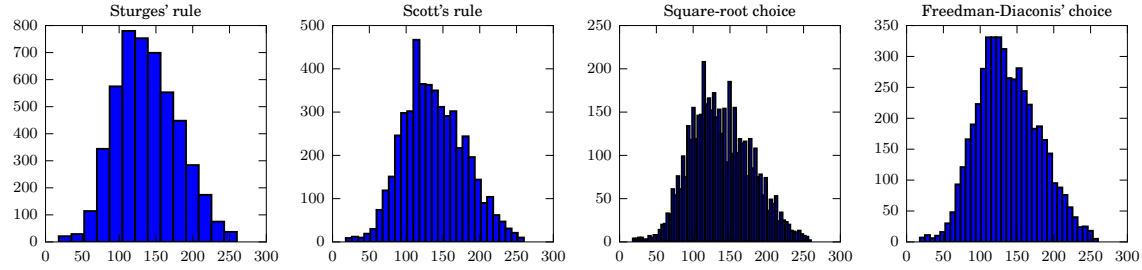

Figure 29: Histograms of attribute *total sulfur dioxide* with outliers further than 3 standard deviations from the mean filtered

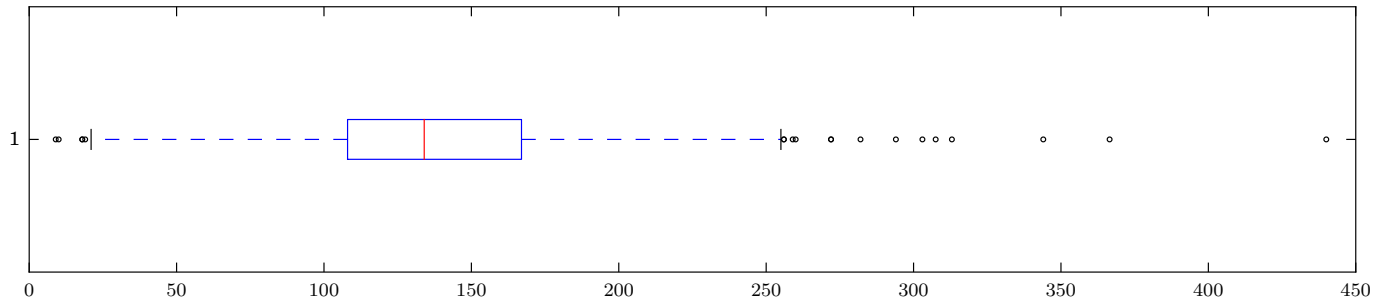

Figure 30: Boxplot of attribute *total sulfur dioxide*

0.1.11 sulphates

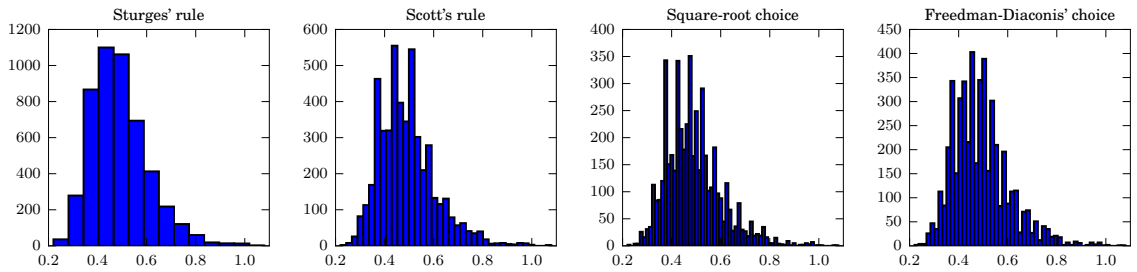

Figure 31: Histograms of attribute *sulphates* using different binning methods

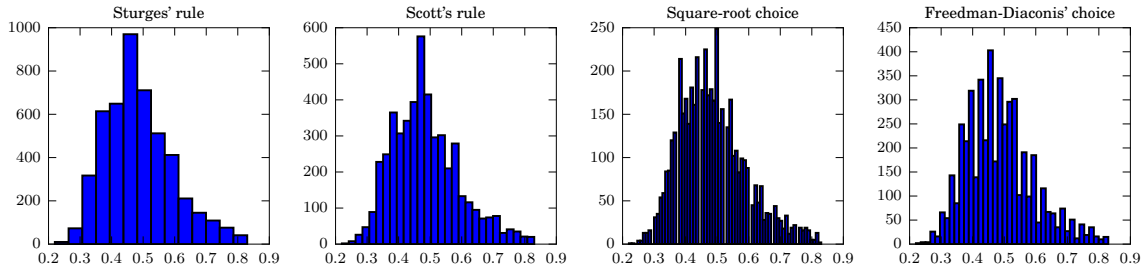

Figure 32: Histograms of attribute *sulphates* with outliers further than 3 standard deviations from the mean filtered

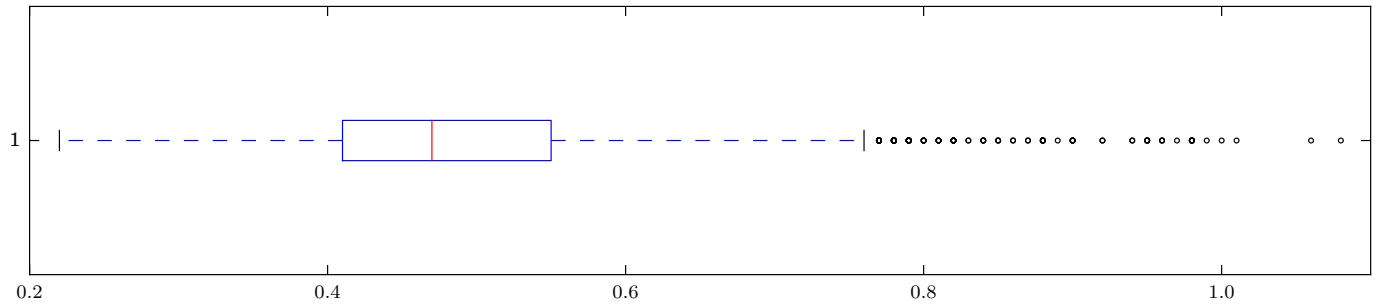

Figure 33: Boxplot of attribute *sulphates*

0.1.12 fixed acidity

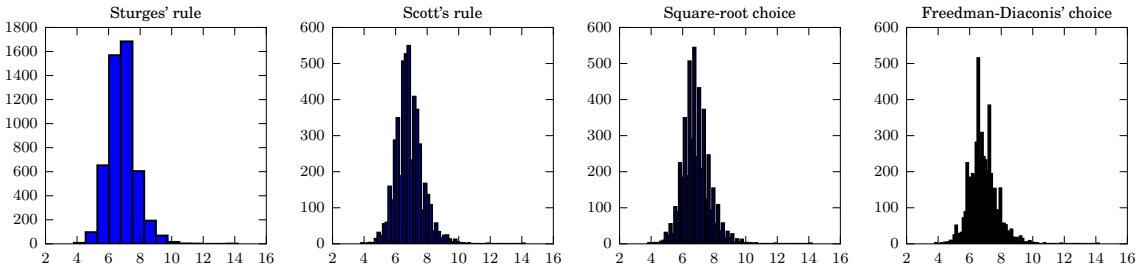

Figure 34: Histograms of attribute *fixed acidity* using different binning methods

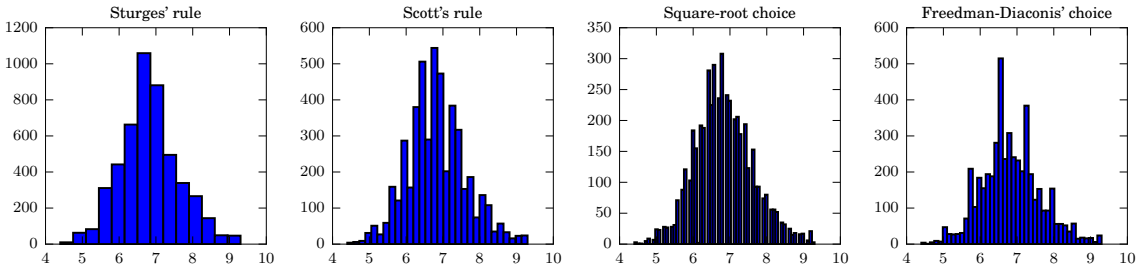

Figure 35: Histograms of attribute *fixed acidity* with outliers further than 3 standard deviations from the mean filtered

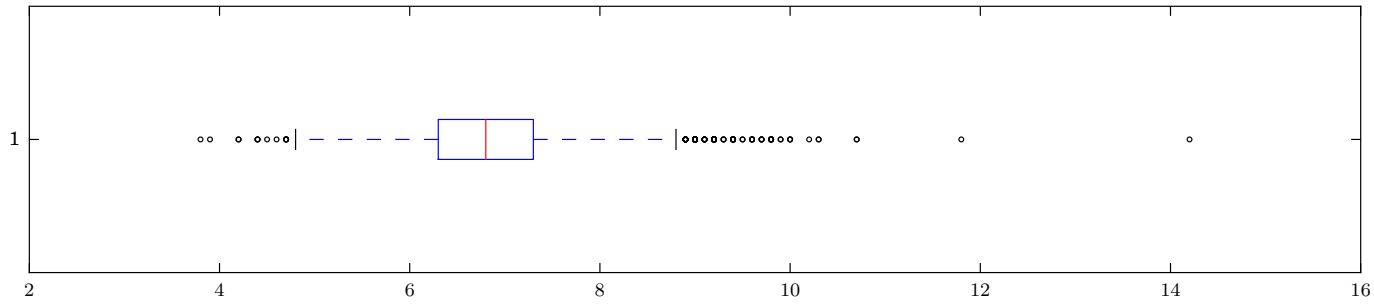

Figure 36: Boxplot of attribute *fixed acidity*

0.2 Plots for the whole feature set

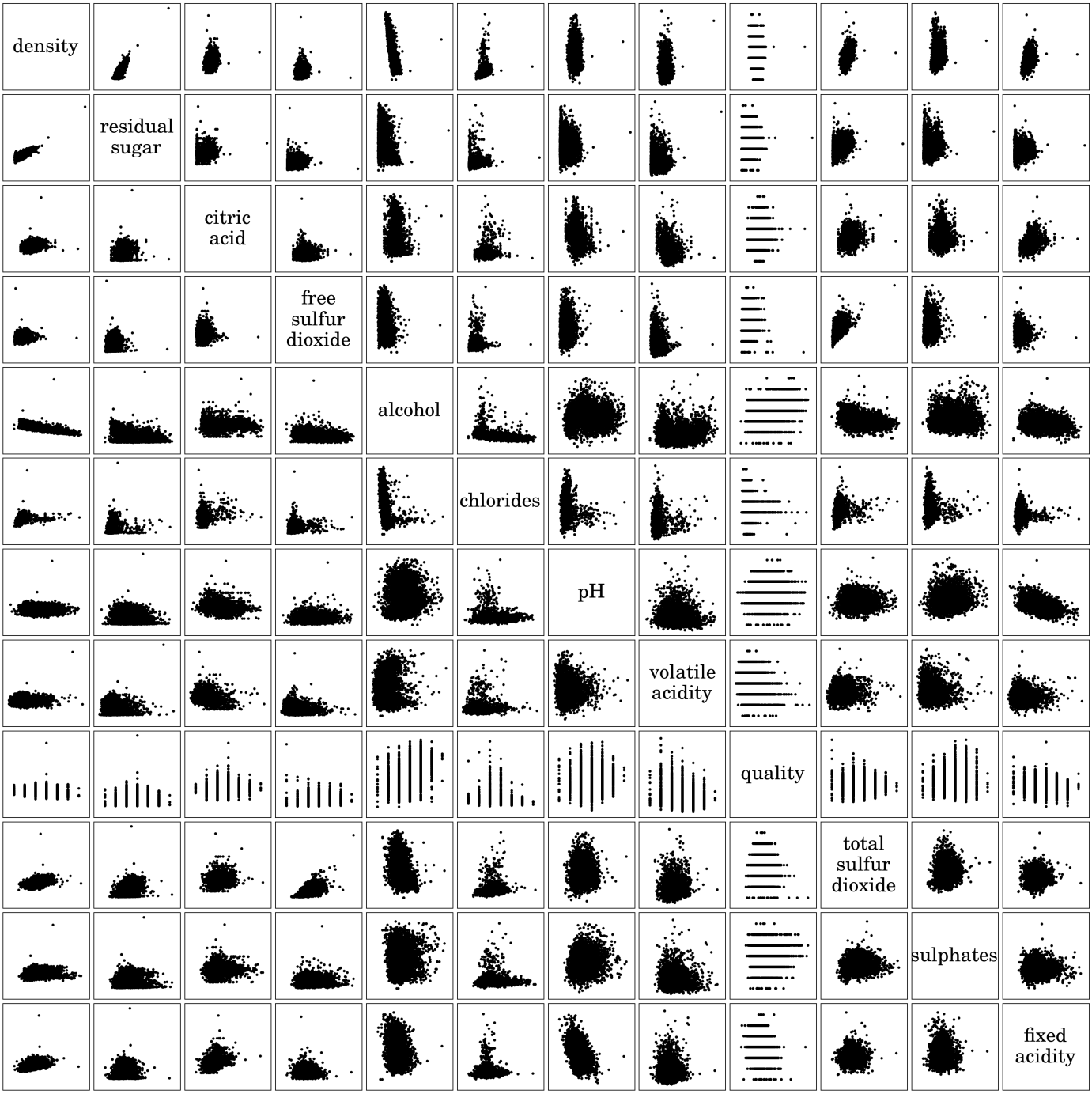

Figure 37: Scatter matrix of the whole feature set

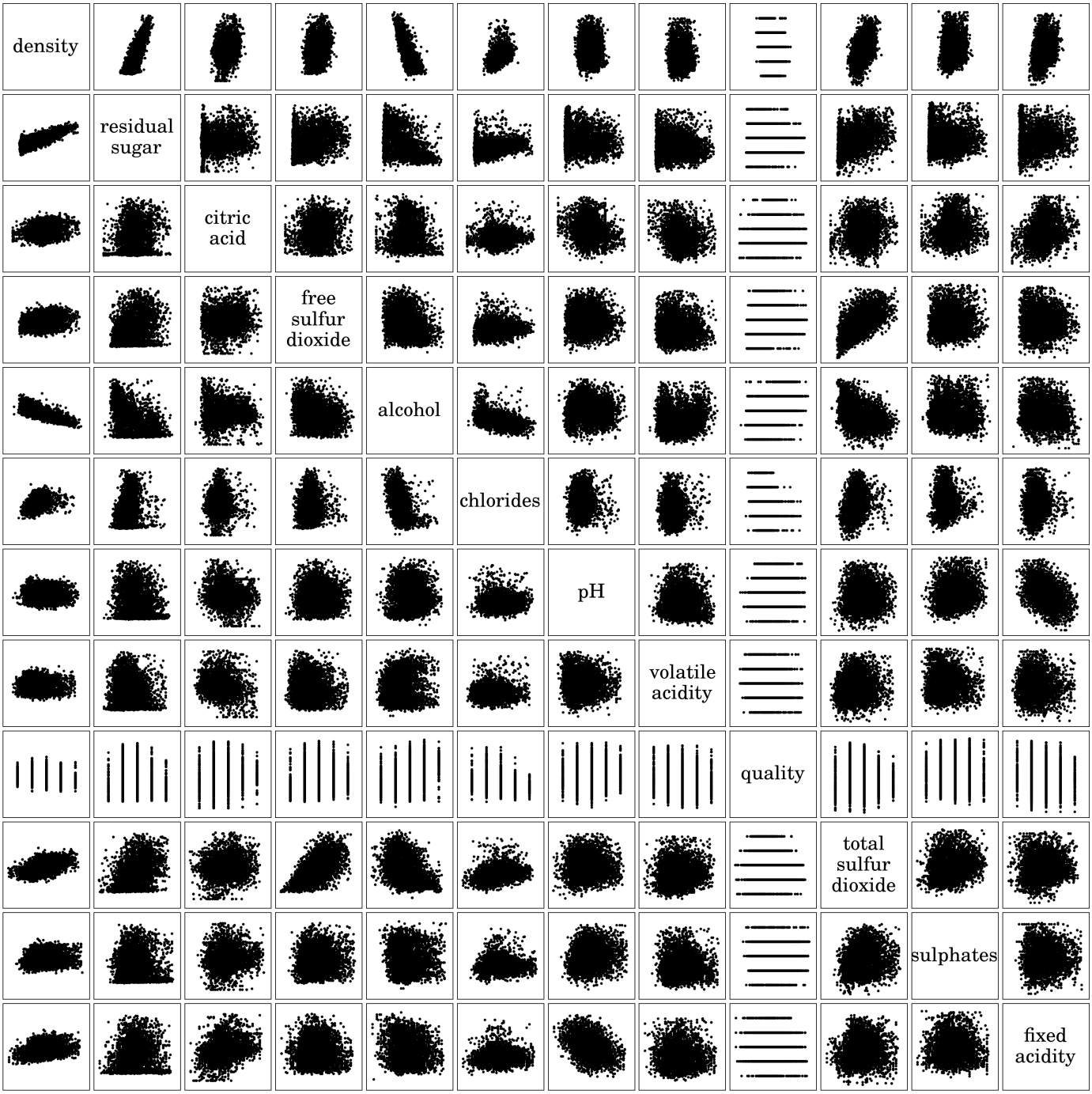

Figure 38: Scatter matrix of the whole feature set with outliers further than 3 standard deviations from the mean filtered

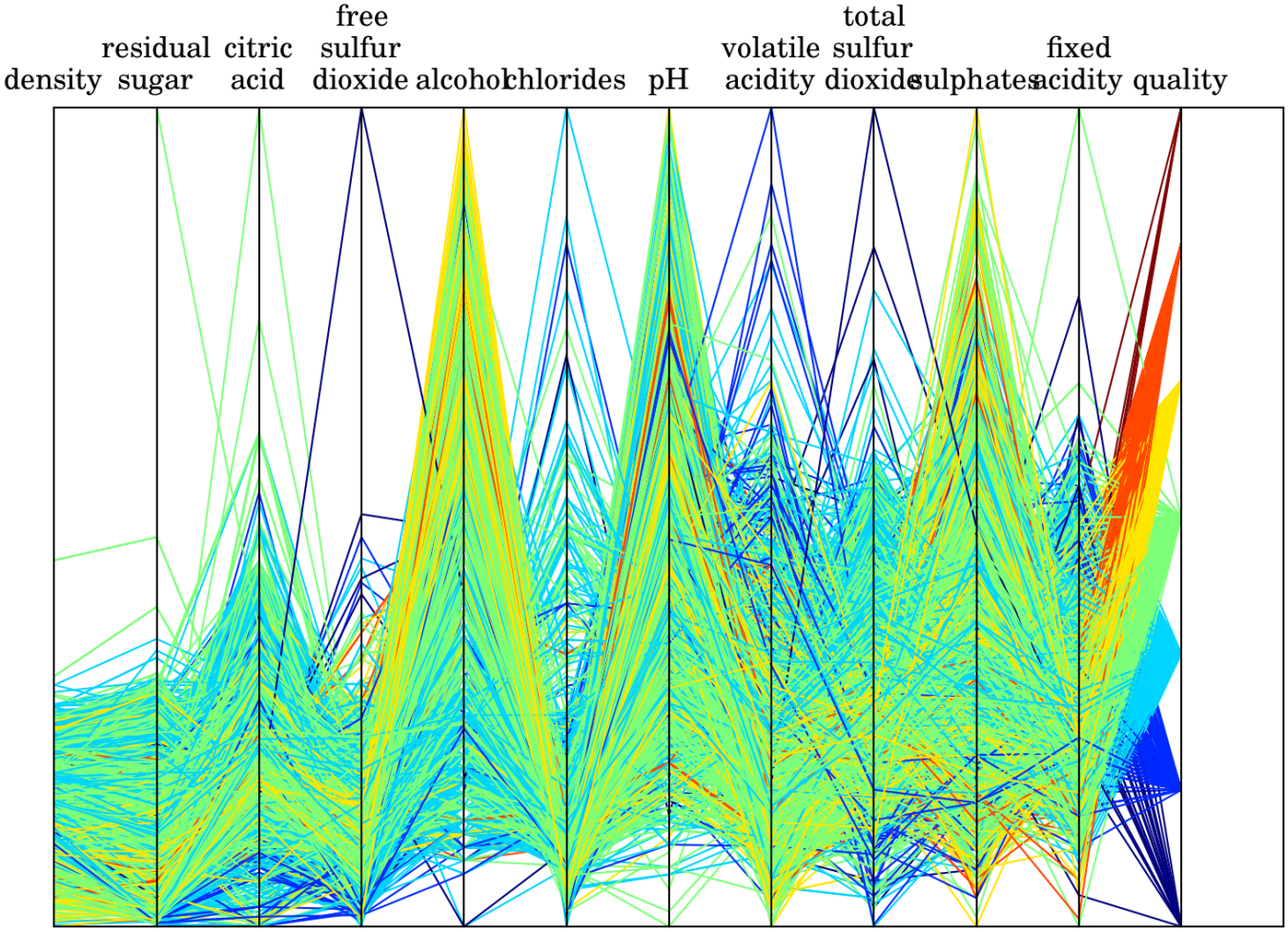

Figure 39: Parallel coordinates representation of the data set

0.3 Correlation coefficients using different functions

0.3.1 Correlation coefficients using Pearson's correlation coefficient

	density	residual sugar	citric acid	free sulfur dioxide	alcohol	chlorides	pH	volatile acidity	quality	total sulfur dioxide	sulphates	fixed acidity
density	**1.0000**	**0.8390**	0.1495	0.2942	**–0.7801**	0.2572	–0.0936	0.0271	–0.3071	**0.5299**	0.0745	0.2653
residual sugar	**0.8390**	**1.0000**	0.0942	0.2991	–0.4506	0.0887	–0.1941	0.0643	–0.0976	0.4014	–0.0267	0.0890
citric acid	0.1495	0.0942	**1.0000**	0.0941	–0.0757	0.1144	–0.1637	–0.1495	–0.0092	0.1211	0.0623	0.2892
free sulfur dioxide	0.2942	0.2991	0.0941	**1.0000**	–0.2501	0.1014	–0.0006	–0.0970	0.0082	**0.6155**	0.0592	–0.0494
alcohol	**–0.7801**	–0.4506	–0.0757	–0.2501	**1.0000**	–0.3602	0.1214	0.0677	0.4356	–0.4489	–0.0174	–0.1209
chlorides	0.2572	0.0887	0.1144	0.1014	–0.3602	**1.0000**	–0.0904	0.0705	–0.2099	0.1989	0.0168	0.0231
pH	–0.0936	–0.1941	–0.1637	–0.0006	0.1214	–0.0904	**1.0000**	–0.0319	0.0994	0.0023	0.1560	–0.4259
volatile acidity	0.0271	0.0643	–0.1495	–0.0970	0.0677	0.0705	–0.0319	**1.0000**	–0.1947	0.0893	–0.0357	–0.0227
quality	–0.3071	–0.0976	–0.0092	0.0082	0.4356	–0.2099	0.0994	–0.1947	**1.0000**	–0.1747	0.0537	–0.1137
total sulfur dioxide	**0.5299**	0.4014	0.1211	**0.6155**	–0.4489	0.1989	0.0023	0.0893	–0.1747	**1.0000**	0.1346	0.0911
sulphates	0.0745	–0.0267	0.0623	0.0592	–0.0174	0.0168	0.1560	–0.0357	0.0537	0.1346	**1.0000**	–0.0171
fixed acidity	0.2653	0.0890	0.2892	–0.0494	–0.1209	0.0231	–0.4259	–0.0227	–0.1137	0.0911	–0.0171	**1.0000**

0.3.2 Correlation coefficients using Spearman's rho

	density	residual sugar	citric acid	free sulfur dioxide	alcohol	chlorides	pH	volatile acidity	quality	total sulfur dioxide	sulphates	fixed acidity
density	**1.0000**	**0.7804**	0.0914	0.3278	**–0.8219**	**0.5083**	–0.1101	0.0101	–0.3484	**0.5638**	0.0951	0.2700
residual sugar	**0.7804**	**1.0000**	0.0246	0.3461	–0.4453	0.2278	–0.1800	0.1086	–0.0821	0.4313	–0.0038	0.1067
citric acid	0.0914	0.0246	**1.0000**	0.0883	–0.0292	0.0327	–0.1462	–0.1504	0.0183	0.0932	0.0798	0.2979
free sulfur dioxide	0.3278	0.3461	0.0883	**1.0000**	–0.2726	0.1670	–0.0063	–0.0812	0.0237	**0.6186**	0.0523	–0.0245
alcohol	**–0.8219**	–0.4453	–0.0292	–0.2726	**1.0000**	**–0.5708**	0.1489	0.0340	0.4404	–0.4766	–0.0449	–0.1068
chlorides	**0.5083**	0.2278	0.0327	0.1670	**–0.5708**	**1.0000**	–0.0540	–0.0049	–0.3145	0.3752	0.0939	0.0947
pH	–0.1101	–0.1800	–0.1462	–0.0063	0.1489	–0.0540	**1.0000**	–0.0452	0.1094	–0.0118	0.1402	–0.4183
volatile acidity	0.0101	0.1086	–0.1504	–0.0812	0.0340	–0.0049	–0.0452	**1.0000**	–0.1966	0.1176	–0.0169	–0.0429
quality	–0.3484	–0.0821	0.0183	0.0237	0.4404	–0.3145	0.1094	–0.1966	**1.0000**	–0.1967	0.0333	–0.0845
total sulfur dioxide	**0.5638**	0.4313	0.0932	**0.6186**	–0.4766	0.3752	–0.0118	0.1176	–0.1967	**1.0000**	0.1578	0.1126
sulphates	0.0951	–0.0038	0.0798	0.0523	–0.0449	0.0939	0.1402	–0.0169	0.0333	0.1578	**1.0000**	–0.0132
fixed acidity	0.2700	0.1067	0.2979	–0.0245	–0.1068	0.0947	–0.4183	–0.0429	–0.0845	0.1126	–0.0132	**1.0000**

0.3.3 Correlation coefficients using Kendall's tau

	density	residual sugar	citric acid	free sulfur dioxide	alcohol	chlorides	pH	volatile acidity	quality	total sulfur dioxide	sulphates	fixed acidity
density	**1.0000**	**0.5890**	0.0615	0.2173	**–0.6351**	0.3491	–0.0756	0.0066	–0.2666	0.3884	0.0642	0.1855
residual sugar	**0.5890**	**1.0000**	0.0153	0.2367	–0.3056	0.1553	–0.1256	0.0728	–0.0631	0.2933	–0.0025	0.0749
citric acid	0.0615	0.0153	**1.0000**	0.0608	–0.0200	0.0223	–0.1013	–0.1040	0.0146	0.0622	0.0545	0.2086
free sulfur dioxide	0.2173	0.2367	0.0608	**1.0000**	–0.1825	0.1139	–0.0052	–0.0548	0.0172	0.4447	0.0356	–0.0169
alcohol	**–0.6351**	–0.3056	–0.0200	–0.1825	**1.0000**	–0.4040	0.1026	0.0235	0.3467	–0.3258	–0.0264	–0.0732
chlorides	0.3491	0.1553	0.0223	0.1139	–0.4040	**1.0000**	–0.0379	–0.0035	–0.2449	0.2571	0.0626	0.0654
pH	–0.0756	–0.1256	–0.1013	–0.0052	0.1026	–0.0379	**1.0000**	–0.0304	0.0844	–0.0084	0.0958	–0.2948
volatile acidity	0.0066	0.0728	–0.1040	–0.0548	0.0235	–0.0035	–0.0304	**1.0000**	–0.1548	0.0813	–0.0116	–0.0296
quality	–0.2666	–0.0631	0.0146	0.0172	0.3467	–0.2449	0.0844	–0.1548	**1.0000**	–0.1512	0.0264	–0.0655
total sulfur dioxide	0.3884	0.2933	0.0622	0.4447	–0.3258	0.2571	–0.0084	0.0813	–0.1512	**1.0000**	0.1087	0.0773
sulphates	0.0642	–0.0025	0.0545	0.0356	–0.0264	0.0626	0.0958	–0.0116	0.0264	0.1087	**1.0000**	–0.0087
fixed acidity	0.1855	0.0749	0.2086	–0.0169	–0.0732	0.0654	–0.2948	–0.0296	–0.0655	0.0773	–0.0087	**1.0000**