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quality control of P- and S-wave picking of local earthquakes

For the accurate determination of local earthquake hypocenters, it is necessary to have reliable and good quality P- and S-wave readings. Data quality control is an important step to correct or filter anomalies that can occur during phase picking. The Chatelain method (Chatelain, 1978) is first applied to facilitate VP/VS ratio calculation. This method is based on calculating the differences between P- and S-waves arrival times between all stations that record the same earthquake. The plot on the same graph of all S-phase differences vs P-phase differences between each pair of stations for all the studied earthquakes over a region in which the VP/VS ratio is supposed to be uniform is used to get the average VP/VS ratio. We then check the points that are outside the scheme, and evidence phase picking anomalies that need to be checked and provide corrections at the concerned station.

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