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New concept for the height assignment of satellite derived wind information

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Atmospheric Motion Vectors (AMVs) are one of the most important products generally derived from all geostationary satellites, because they constitute a very important part of the observation data fed to Numerical Weather Prediction models. The Height Assignment (HA) is currently the most difficult task in the AMV extraction scheme. Several sources of error can be introduced at the height assignment step, but one of the main difficulties is to clearly identify the pixels that lead the tracking process in the tracer box, in order to select them for the HA calculation. A good pixel selection process should ensure to keep a direct link between the feature really tracked and the calculation of the height. The most common method sorts the coldest pixels in the target box and uses them to calculate the AMV height. However, recent work showed that some of the coldest pixels can have very small and/or negative contribution to the cross correlation process. Following these findings, it is then proposed to the use individual pixel contribution to the cross correlation coefficient information in the pixel selection process, in order to get a closer link between the tracked feature tracked and the HA. This presentation will present and discuss the last results that have been investigated at EUMETSAT, in order to improve this pixel selection process in AMV extraction algorithms.