The level of Information Structure (IS) most related to acoustic features is the one often referred to as "Topic-Focus" (T-F), for which we adopt the definitions proposed by Cresti (2000) and Lombardi Vallauri (2009), based on which part of the utterance may be regarded as conveying its illocutionary force (the F) and which not (the T).

Utterances from two corpora of spoken Italian have been labeled as T or F following essentially two criteria:

(i) Subjective evaluation, based on the perception of acoustic patterns and on negation tests.

(ii) The evaluation of the preceding context, aimed at establishing which information may be considered as Given at the utterance time, and consequently less likely to be in F, or New and consequently more likely to be in F.

We tried to investigate the correlation between focused items and phonetic features by considering the concept of prosodic prominence as a complex and rich set of acoustic features combined in a sophisticated way. Following a definition of prominence (P) currently accepted, we can say that prosodic P is a perceptual phenomenon, continuous in its nature, emphasizing segmental units with respect to their surrounding context, and supported by a complex interaction of prosodic and phonetic/acoustic parameters.

We will primarily refer to Kohler (2005) for a description of the interactions between the different prosodic features that determine the perception of P. In this view, there are two main ‘actors’ playing a relevant role in supporting sentence P. The first, pitch accent (PA), concerns specific movements in F0 profile. The second, force accent (FA), is independent from intonation and is connected with intensity, segmental durations and possibly other parameters. The technical details of the automatic prominence detection algorithm are described in (Tamburini, 2009).

We performed two experiments, aimed at searching invariances in position and level of the main prominence (MP) compared to the IS assigned to the utterances by an expert annotator. The first experiment is a pilot study on a limited corpus of spoken Roman Italian. The second was aimed to verify the results for the same kind of Italian variety on a different corpus, and to extend the analysis to two further varieties, namely Florentine and Neapolitan Italian. We considered only utterances of three classes on the basis of IS: (a) TOPIC/FOCUS; (b) BROAD FOCUS; (c) NARROW FOCUS/APPENDIX.

The results of both experiments show relevant regularities in the distribution of the prominent syllables, especially considering the position of the main prominence (MP), in relation to the kind of IS. Comparison between perceptual evidence and automatic measurement made by means of the algorithm lead to the following provisional conclusions:

1. In our corpus of spoken Italian (and in wide accordance with the literature), the MP steadily marks constituents located to the left of the utterance, namely the T and the Left/NF. More precisely, the prominence marks the right end of such constituents. Right/BF occasionally but not necessarily receives the MP.
2. This can be interpreted as for the main prominence to have primarily a \textit{demarcative} function, i.e. that of marking the boundary between two information units within the utterance. When this function is not required, as with a BF, acoustic marking is possible but not required.

3. Culminative function, effected by qualitatively different prominences, may be at work to distinguish between a T and a Left F.

4. The marking of the boundary between T and F is not always neatly effected, showing that the opposition between T-F and BF utterances is not a matter of black & white, rather one of a gray scale; utterances can remain ambiguous between the two constructions, or even actually present intermediate status.

This approach may explain why Ts are marked more strongly and more constantly than Fs. If the function of the MP were that of culminating relevant categories of IS, then Fs should be marked by prominences at least as strongly as Ts, and even more, as a consequence of their greater communicative import; on the contrary, the fact that the location most strongly and constantly marked by prominence is the end of the T suggests that the MP essentially marks a boundary. Then, the kind of illocutionary act is signaled by the intonational contour of the F: for this task, a main acoustic prominence is not necessary.

On the contrary, neat marking of the boundary is necessary when the F precedes the rest of the utterance, because this results in a Narrow, possibly Contrastive F, whose contribution to the communicative dynamism of the discourse is dramatically different from that of a BF. The distinction between T-F and F-A is neatly kept by the highly specific contour of the A, which is totally flat and devoid of prominence, completely different from that of a F following a T.

This reveals the speakers’ behaviour as strikingly obeying the laws of language economy. Semiotically, the only elements strictly needed in order to encode all categories are (i) one MP, and (ii) the difference between the flat contour of A and any F contour with its capacity to express illocution. Since the different intonational contours of Fs are independently necessary to express different linguistic acts, the specific costs required by the process of marking the positions of T and F are very low.

Much more work should be done to completely confirm this proposal using more data and more IS configurations.