Regularity of tangential decompositions

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Given a form F of degree d, its tangential decompositions are additive decompositions of F that involve only terms of type $L^{(d-1)}G$, where L and G are linear forms. To any such decomposition, we can naturally associate 0-dimensional apolar schemes made of simple points (when L = G, projectively), and 2-jets (when L and G are not proportional). Among these schemes, it is possible to find irredundant ones (i.e. those minimal by inclusion) that are not regular in degree d. Nonetheless, this never happens for the shortest schemes (i.e. those minimal by length), as we can always "refine" such an irregular scheme to obtain a d-regular and strictly shorter one, of the same type. In this talk, I will illustrate this construction and briefly discuss its implications for the explicit computation of minimal tangential decompositions of forms. This is based on a joint work with A. Bernardi and A. Oneto.