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**Yuan Gao, Tao Luo** and **Nung Kwan Yip\*** (yip@math.purdue.edu). *Coarsening rates for non-local Cahn-Hilliard equation.*

We will discuss the coarsening rates for a non-local Cahn-Hilliard equation. The results depend on the exponent  $s$  of the underlying kernel and are consistent with the corresponding sharp interfacial limits. For  $s < 1/2$ , the limiting dynamics is given by a genuine non-local Mullins-Sekerka dynamics while for  $s > 1/2$ , by the classical local version. The approach is based on a work of Kohn and Otto. The key technical lemmas are two inequalities. One is an interpolation inequality that relates the energy ( $E$ ) and the length scale ( $L$ ) of the spatial pattern and the other relates their temporal rate of change. This is joint work with Yuan Gao and Tao Luo. (Received August 29, 2021)