New regularity properties of minimizers of some variational integrals

We present some problems studied in cooperation with Professor Atsushi Tachikawa. We treat regularity results for minimizers

$$u(x): \Omega \subset \mathbb{R}^m \rightarrow \mathbb{R}^n$$

of quadratic and non quadratic growth functional

$$\int_{\Omega} A(x, u, Du)dx.$$

About the dependence on the variable $x$, it is assumed only that $A(\cdot, u, p)$ is in the vanishing mean oscillation class, as a function of $x$. Namely, the continuity of $A(x, u, p)$ with respect to $x$ is not assumed. This is a placeholder abstract. To be changed in a couple of days (Received August 01, 2017)