Choonkil Park* (baak@hanyang.ac.kr), Department of Mathematics, Hanyang University, Seoul, 04763, South Korea. *New additive functional inequalities and partial multipliers in Banach algebras. Preliminary report.

In this talk, we solve the additive functional inequalities

\[ \| f(x+y+z) - f(x+y) - f(z) \| \leq \| s(f(x-y) + f(y-z) - f(x-z)) \| \]  

(1)

and

\[ \| f(x-y) + f(y-z) - f(x-z) \| \leq \| s(f(x+y-z) + f(x-y+z) - 2f(x)) \|, \]  

(2)

where \( s \) is a fixed nonzero complex number with \( |s| < 1 \).

Using the direct method, we prove the Hyers-Ulam stability of the additive functional inequalities (1) and (2) in complex Banach spaces. This is applied to investigate partial multipliers in Banach \(*\)-algebras, unital \( C^* \)-algebras, Lie \( C^* \)-algebras, \( JC^* \)-algebras and \( C^* \)-ternary algebras, associated with the additive functional inequalities (1) and (2). (Received February 20, 2018)