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**Hongqiu CHEN\*** (hchen1@memphis.edu), University of Memphis, Department of Mathematical Sciences, Memphis, TN 38152, and **Jerry L BONA**. *Well-posedness for systems of coupled BBM-equations*. Preliminary report.

In this lecture, we introduce a system

$$u_t + u_x - u_{xxt} + P(u, v)_x = 0,$$

$$v_t + v_x - v_{xxt} + Q(u, v)_x = 0$$

of coupled BBM-type equations, where  $u = u(x, t)$ ,  $v = v(x, t)$  are functions defined for  $x \in (-\infty, \infty)$  and  $t \in [0, \infty)$ .  $P(u, v) = Au^2 + Buv + Cv^2$  and  $Q(u, v) = Du^2 + Euv + Fv^2$  in which  $A, B, \dots, F$  are real number constants. It is an alternative model to the one recently introduced by Bona, Cohen and Wang:

$$u_t + u_x + u_{xxx} + P(u, v)_x = 0,$$

$$v_t + v_x + v_{xxx} + Q(u, v)_x = 0$$

We show that it is well-posed locally in time in  $H^s \times H^s$  for any  $s \geq 0$ . Furthermore, under certain conditions on  $P$  and  $Q$ , the system is well-posed globally in time. (Received August 27, 2011)