Stability Analysis: Oldroyd-B 2D

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1 Equation Coefficients

1.1 A_{11} Equation

$A_{11}\,\omega =$

p	0
v_1	$A_{11_0}ik_1 + 2A_{12_0}ik_2$
v_2	$-A_{11_0}ik_2$
A_{11}	$v_{1,x_{10}} - v_{2,x_{20}} - 1$
A_{12}	$2v_{1,x_{10}}$
A_{22}	0

1.2 A_{12} Equation

$A_{12}\,\omega =$

p	0
v_1	$A_{22_0}ik_2$
v_2	$A_{11_0}ik_1$
A_{11}	$v_{2,x_{10}}$
A_{22}	$v_{1,x_{10}}$

1.3 A_{22} Equation

$A_{22}\,\omega =$

p	0
v_1	$-A_{22_0}ik_1$
v_2	$A_{22_0}ik_2 + 2A_{12_0}ik_1$
A_{11}	0
A_{12}	$2v_{2,x_{10}}$
A_{22}	$-v_{1,x_{10}} + v_{2,x_{20}} - 1$

1.4 x_1 Momentum Equation

$El^{-1}v_1\,\omega =$

p	$-ik_1$
v_1	$-El^{-1}(v_{1_0}ik_1 + v_{1,x_{10}} + v_{2,x_{20}}) - \beta\,(k_1^2 + k_2^2)$
v_2	$-El^{-1}v_{1_0}ik_2$
A_{11}	ik_1
A_{12}	ik_2
A_{22}	0

1.5 x_2 Momentum Equation

$El^{-1}v_2\,\omega =$

p	$-ik_2$
v_1	$-El^{-1}v_{2_0}ik_1$
v_2	$-El^{-1}(v_{2_0}ik_2 + v_{1,x_{10}} + v_{2,x_{20}}) - \beta\,(k_1^2 + k_2^2)$
A_{11}	0
A_{12}	ik_1
A_{22}	ik_2

1.6 Mass Equation

$0\ \omega =$

p	0
v_1	ik_1
v_2	ik_2
A_{11}	0
A_{12}	0
A_{22}	0

2 Repeated Terms/Phrases

2.1 Most Helpful

$A_{11_0}ik_1 + A_{12_0}ik_2$

$A_{12_0}ik_1 + A_{22_0}ik_2$

$A_{13_0}ik_1 + A_{23_0}ik_2$

$k_1^2 + k_2^2$

$A_{11_0}v_{1,x_{1_0}} + A_{12_0}\left(v_{1,x_{2_0}} + v_{2,x_{1_0}}\right) + A_{22_0}v_{2,x_{2_0}}$

2.2 Also Helpful

$v_{1,x_{1_0}} + v_{2,x_{2_0}}$

$v_{1,x_{2_0}} + v_{2,x_{1_0}}$