

Read the two part paper by Jiang-Sehitoglu. The constitutive equations are given in class and also in the papers. Use the following set of constants below. Try to obtain the ratcheting simulation results for constant axial stress and shear cycling. Assume no memory surface and no non-Masing behavior.

$c^{(i)}$	$c_0^{(1)} = 1510$ $c_0^{(2)} = 461$ $c_0^{(3)} = 177$ $c_0^{(4)} = 77$ $c_0^{(5)} = 39$ $c_0^{(6)} = 20$ $c_0^{(7)} = 12$ $c_0^{(8)} = 6.7$ $c_0^{(9)} = 4.8$ $c_0^{(10)} = 2.7$ $a_1^{(i)} = a_2^{(i)} = 0$ ($i=1, 2, \dots, 10$)
$r^{(i)}$	$r^{(1)} = r^{(2)} = r^{(3)} = r^{(4)} = r^{(5)} = r^{(6)} = r^{(7)} = r^{(8)} = r^{(9)} = 63.5$ MPa $r^{(10)} = 245$ MPa
$\chi^{(i)}$	$a_\chi = 0.0293$ $b_\chi = 0.0128$ MPa ⁻¹ $Q_0^{(1)} = 0.25$ $Q_0^{(2)} = 1.0$ $Q_0^{(3)} = Q_0^{(4)} = 2.3$ $Q_0^{(5)} = Q_0^{(6)} = Q_0^{(7)} = Q_0^{(8)} = Q_0^{(9)} = 2.75$ $Q_0^{(10)} = 4.5$
Others	$c_M = 10$ $k_1 = 92.7$ MPa $a_k = 0.0361$ $c_k = 0.0094$ MPa ⁻¹

