

1096-49-1759

Heinz H Bauschke and **Hung M Phan*** (hungm.phan@yahoo.com), 460 Buckland Ave, Apt.308, Kelowna, BC V1Y5Z4, and **Xianfu Wang**. *Method of Cyclic Relaxed Projections for Nonconvex Systems*. Preliminary report.

The Method of Cyclic Projections (MCP) for systems of sets is a classical algorithm for solving feasibility problems. The Method of Alternating Projections (MAP), a special case of MCP when the system consists only two sets, has recently been intensely studied for nonconvex settings. However, only local convergence results are available: convergence occurs if the starting point is not too far away from solutions. Instead of taking full projection steps, it can be advantageous to underrelax, i.e., to move only part way towards the constraint set, in order to enlarge the regions of convergence. In this paper, we thus study the Method of Cyclic Relaxed Projections (MCRP) for systems of two or more (possibly nonconvex) sets. Complementing recent work on MCP/MAP, we establish local linear convergence results for the MCRP. (Received September 16, 2013)