Design of a Minimum Emittance nBA Lattice*,

D. JEON and S.Y. LEE, Indiana Univ., Cyclotron Facility - An attempt to design a minimum emittance n-bend achromat (nBA) lattice has been made. One distinct feature is that dipoles with two different length were used. In case of triple bend achromat lattice with twelve superperiod, the obtained emittance is two times larger than the theoretical minimum. Tunes were chosen to avoid third order resonances and four family sextupoles were placed to compensate first and second order chromaticities. As a multiple bend achromat, five bend achromat lattice with six superperiod was designed. The obtained emittance is three times larger than the theoretical minimum. In order to correct first and second order chromaticities, eight family sextupoles were placed. The obtained emittance of five bend achromat is almost equal to the minimum emittance of five bend achromat lattice consisting of dipoles with equal length.