Beam Simulator for KOMAC 100 MeV proton linac

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KOMAC (korea multi-purpose accelerator complex) is a multi-user facility to provide a high intensity proton beam for a varity of user programs. A main equipment of this facility is a proton linear accelerator that is comprised of a 50 keV injector, 3-MeV radio frequency quadrupole (RFQ), and 100-MeV drift tube linac (DTL). A proton beam simulator under development at KOMAC was used as the training program for new operators. Since the facility has the limited number of beam diagnostics tools now, the information about the beam dynamics inside of the accelerator during the routine operation is not enough. Thus, this simulator developed as the training program can be used to maintain the high beam quality and minimal beam loss. For example, if the routine experiment wants to have the larger beam, these operation parameters can be applied into the accelerator control system after these values are earned from the proton beam simulator. In this contribution, the structure of the proton simulator and input parameters used in the simulator will be presented and how the real beam size can be adjusted using the simulator will be discussed.