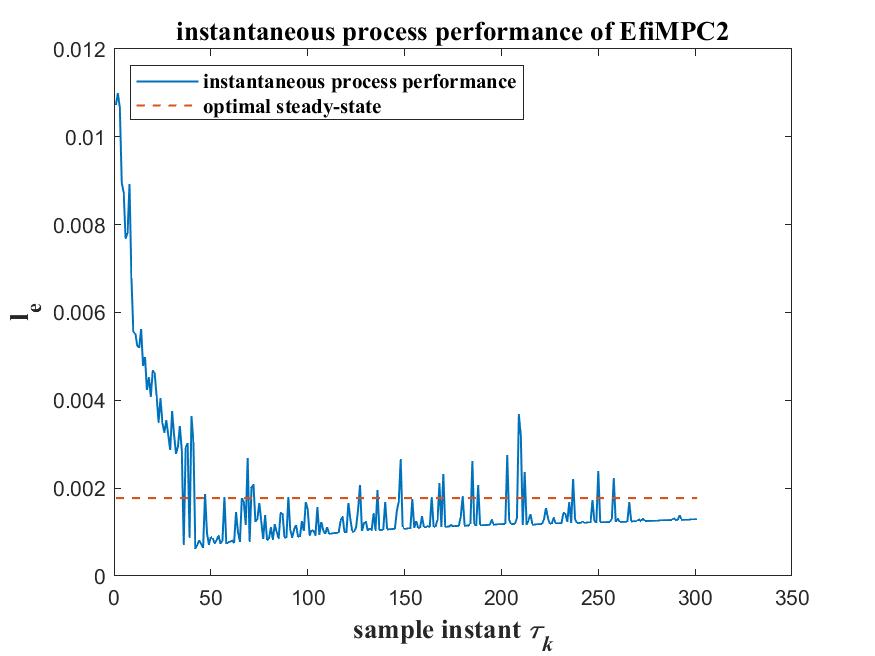
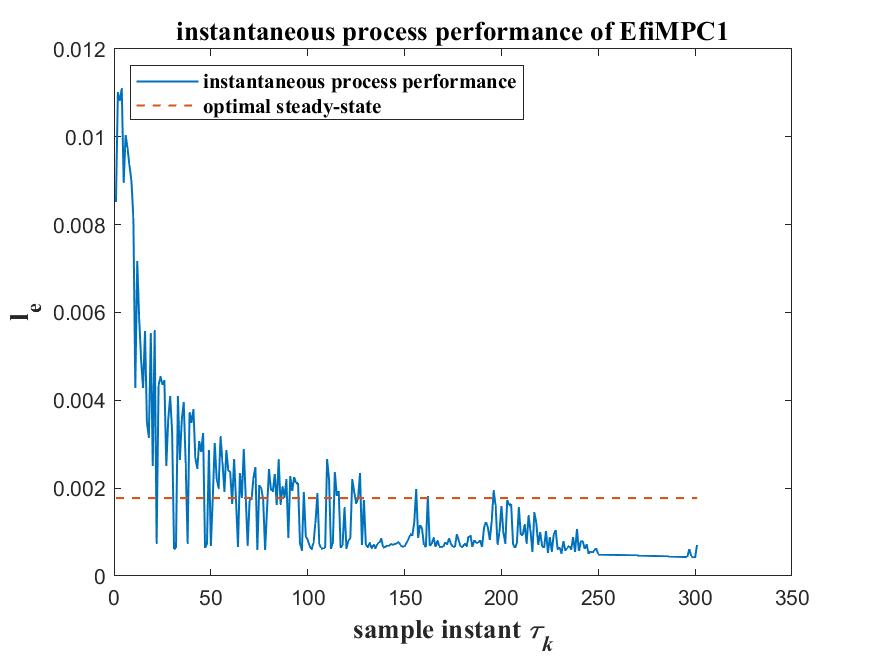
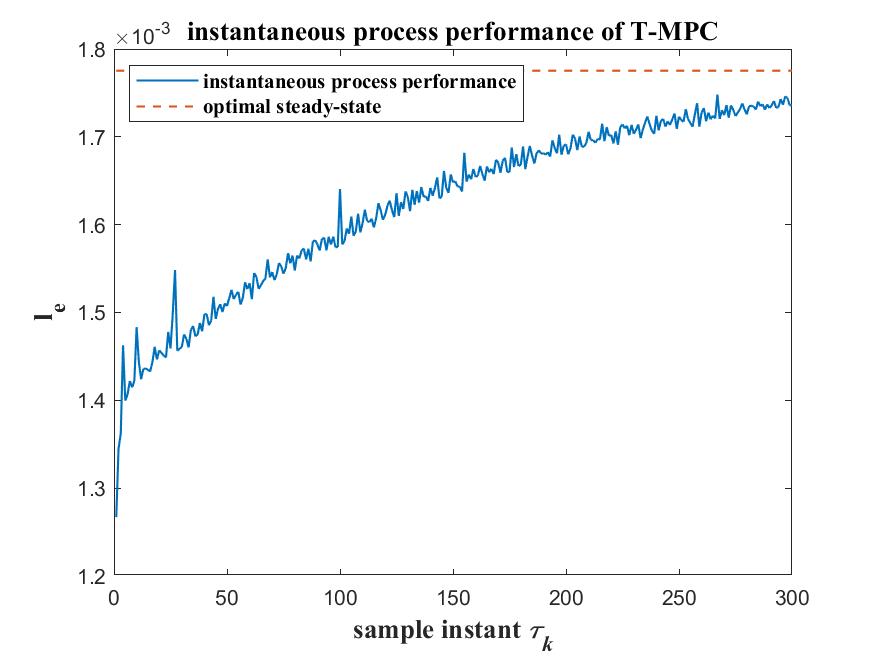
Appendix





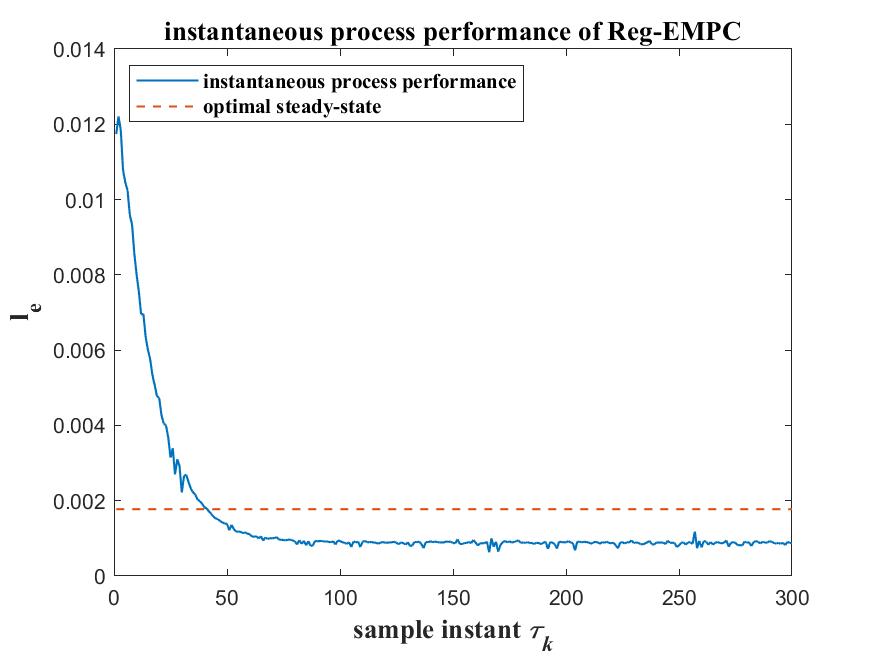
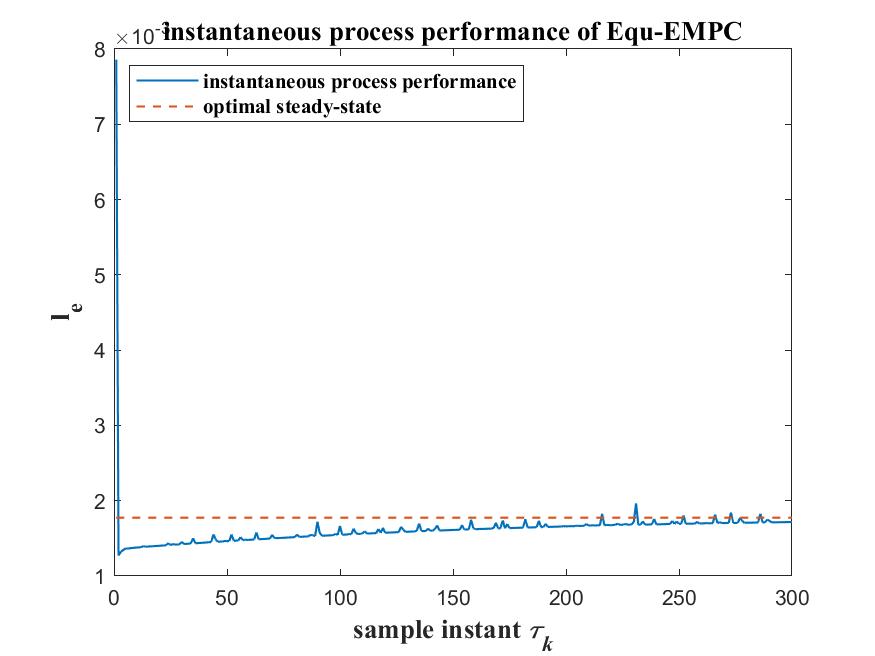


Figure A1. The instantaneous process performance of the comparative control strategies

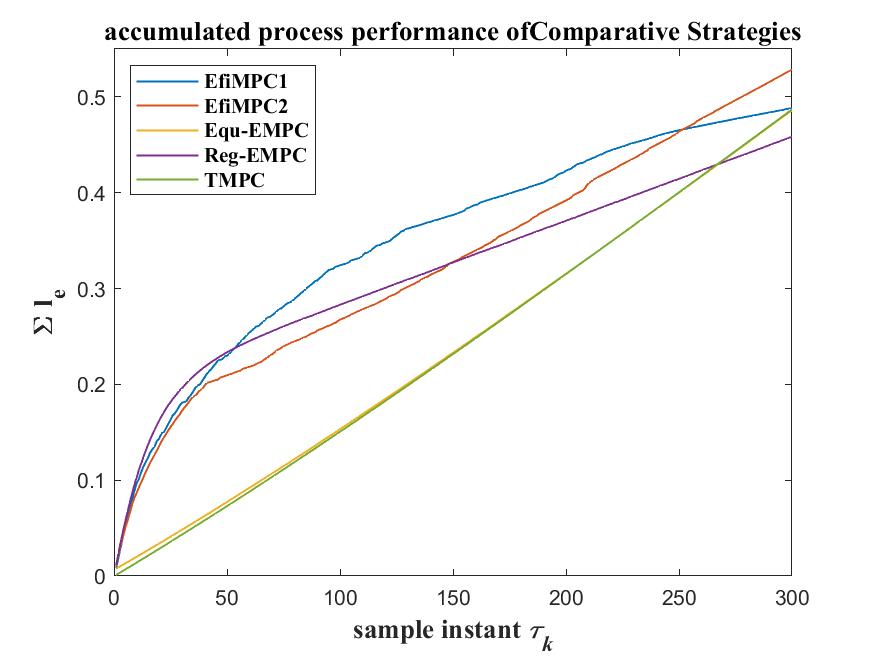
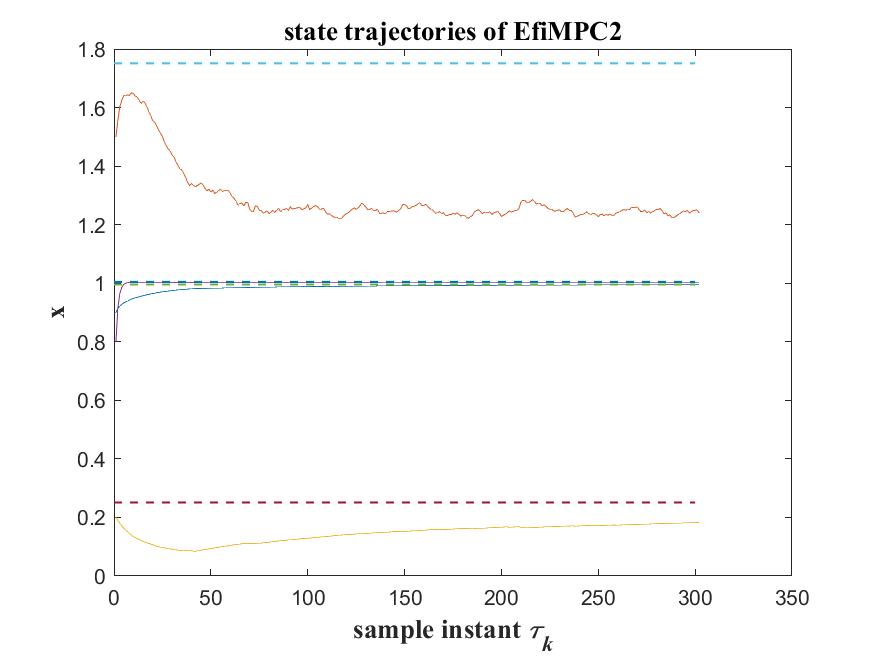
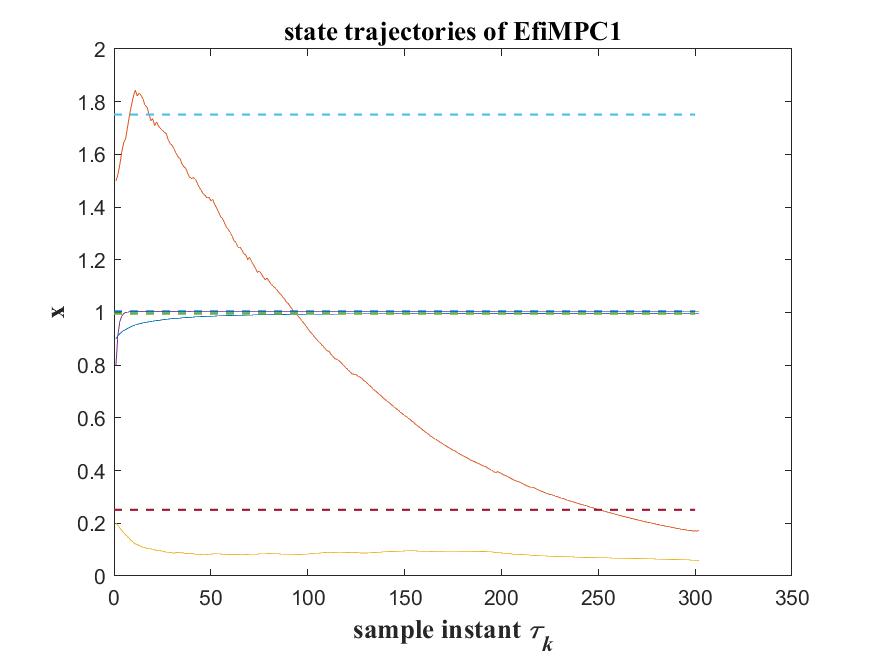
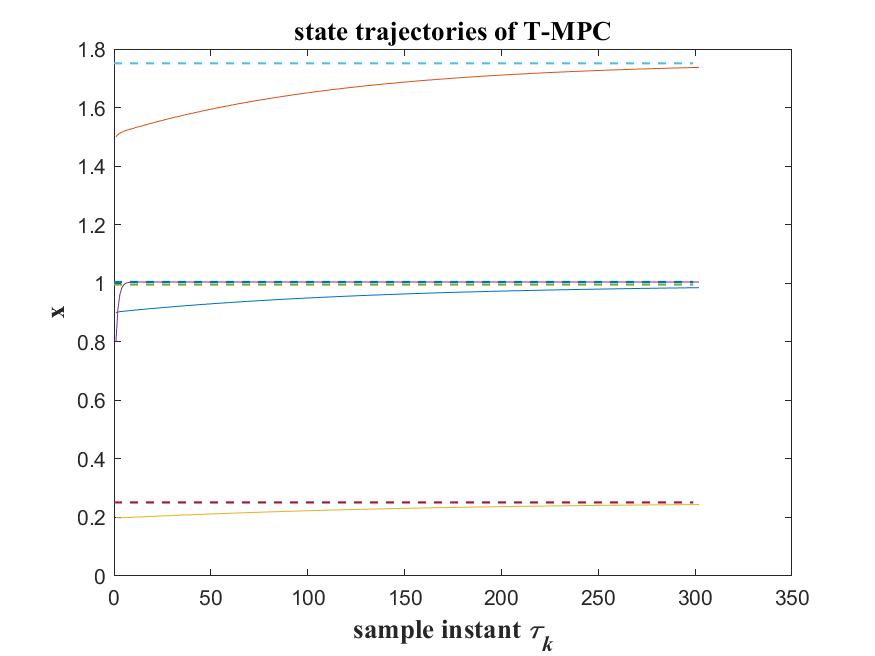


Figure A2. The accumulated process performance of the comparative control strategies





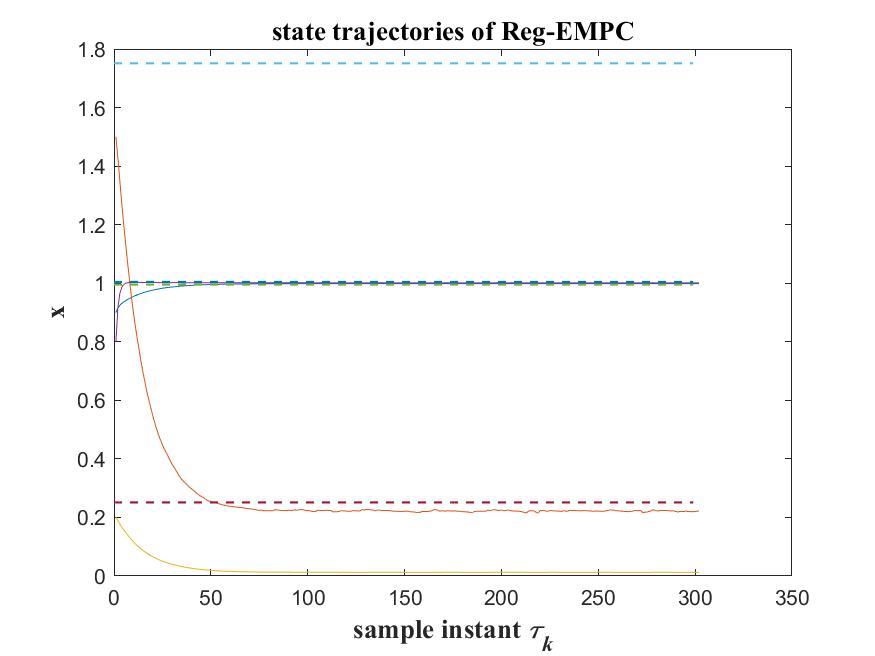
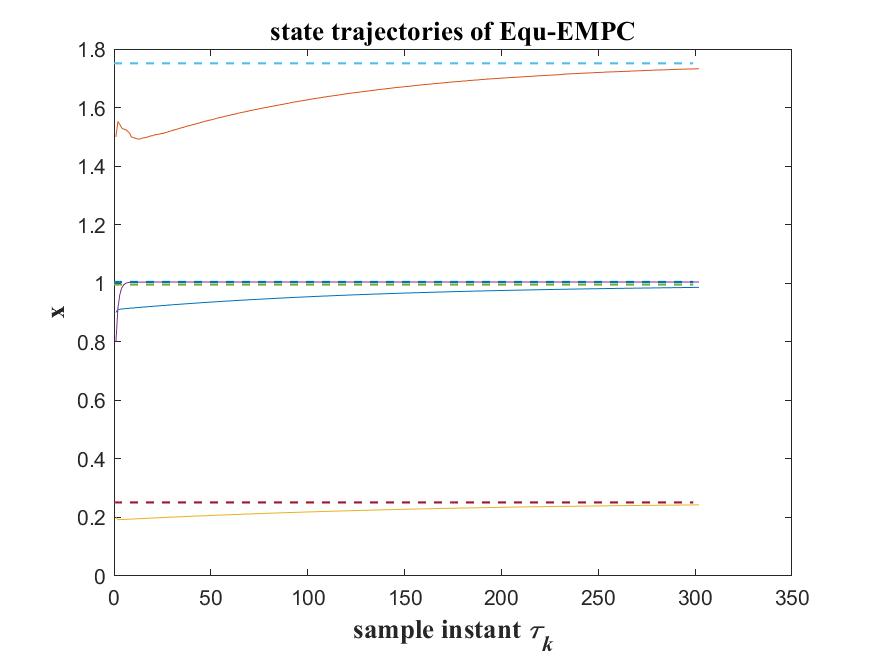
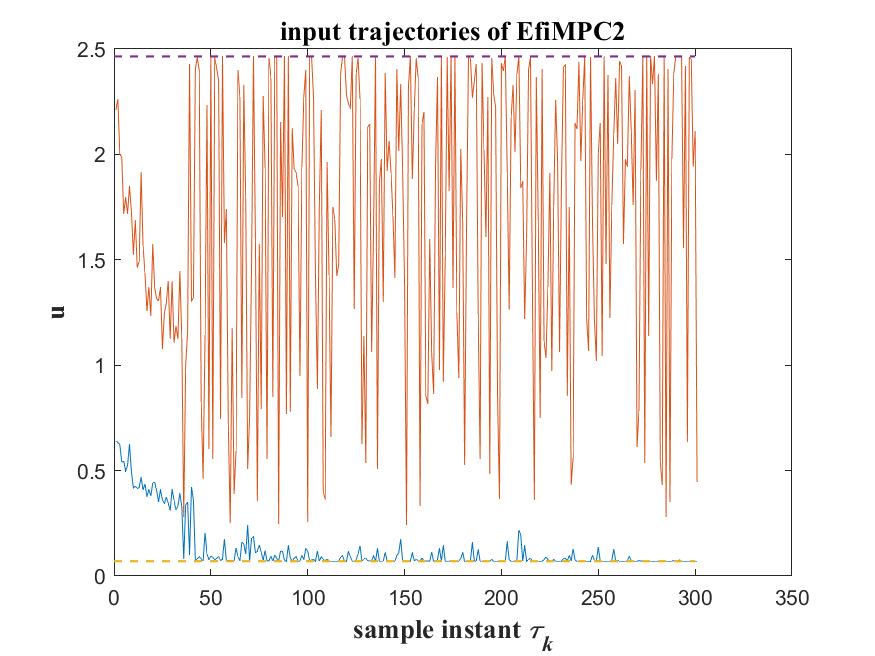
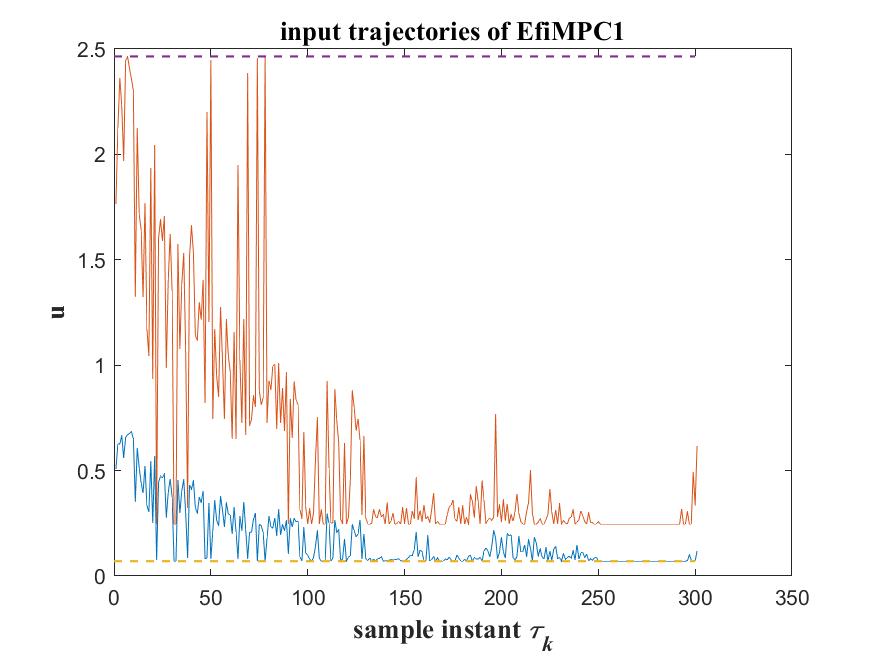
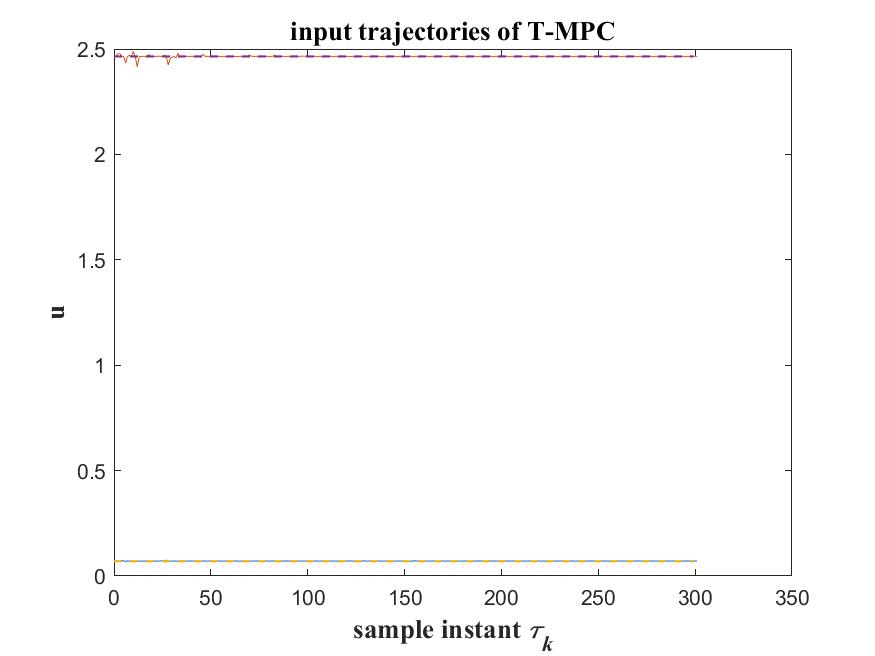


Figure A3. The state trajectories of the comparative control strategies





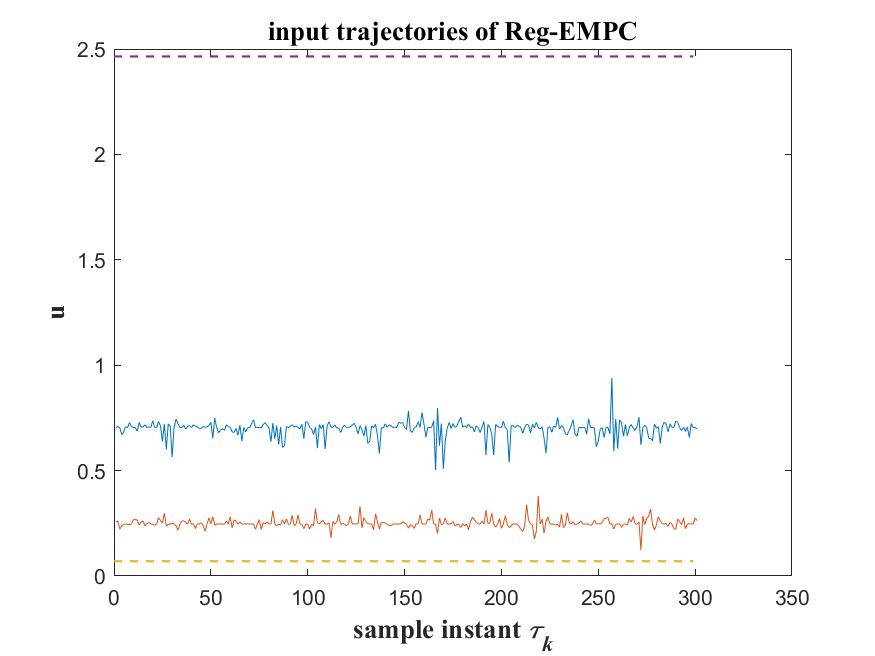
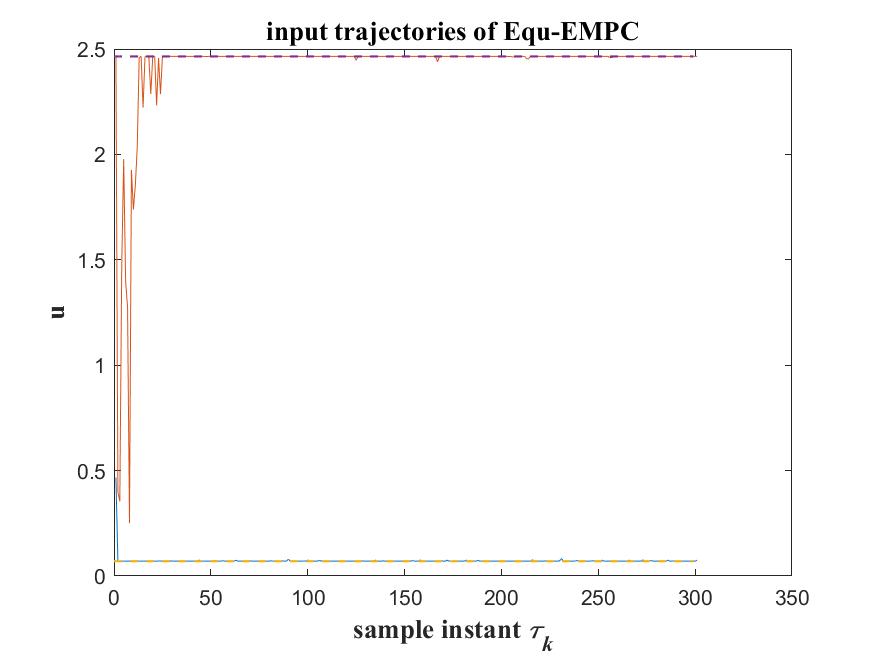


Figure A4. The input trajectories of the comparative control strategies

local optimal process trap

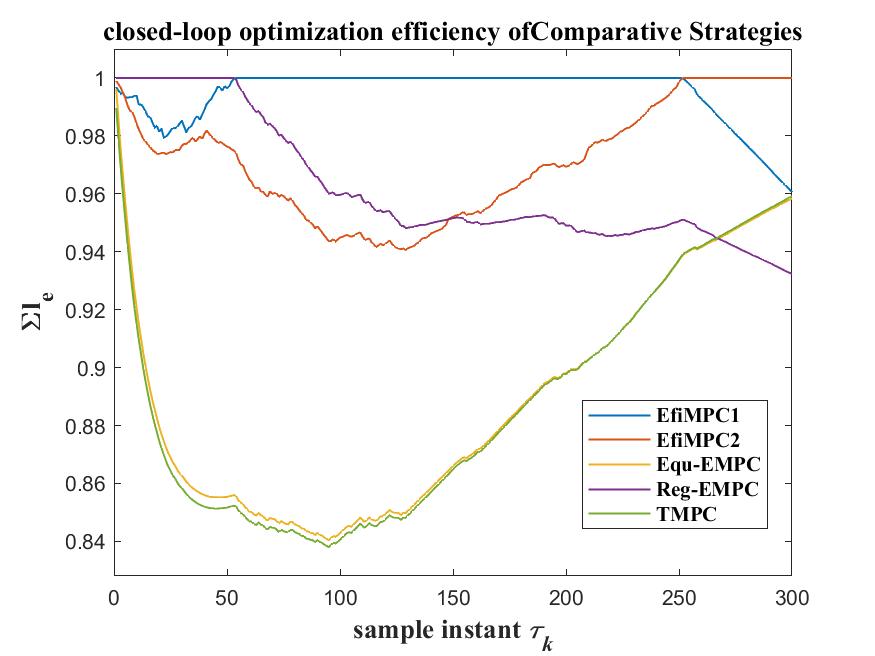


Figure A6. The closed-loop optimization efficiency of the comparative control strategies

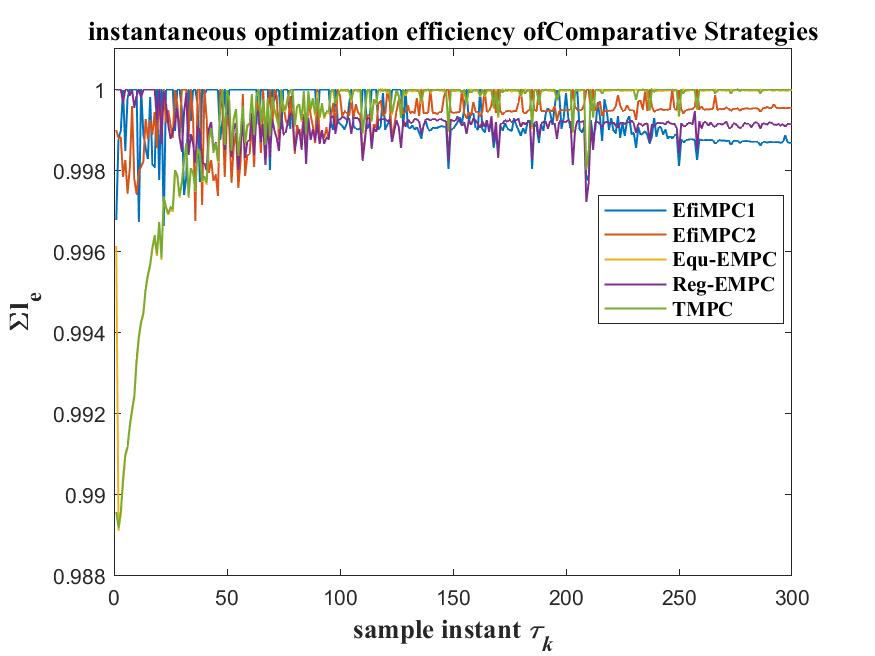


Figure A5. The instantaneous optimization efficiency of the comparative control strategies