Project review

- Team: ISZ_22
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- Review by: Michał Sołek, Marek Krupa

1. Problem formulation [0-5 pts]:
   - Is the problem clearly stated

     Yes, the problem describes unplanned stop by occurrence and duration [1/1]
   - What is the point of creating model, are potential use cases defined

     Yes, the point and use cases are described [1/1]
   - Where do data come from, what does it contain

     Yes, data comes from factory's MES system which contains states, counters, cycle times [1/1]
   - DAG has been drawn?

     Yes [1/1]
   - Confounding (pipe, fork, collider) were described

     Yes [1/1]
2. Data preprocessing [0-2 pts]:
   - Is preprocessing step clearly described

     Yes, data was preprocessed and divided into equal time windows [1/1]
   - Reasoning and types of actions taken on dataset have been described

     Yes, all data was sorted [1/1]
3. Model [0-4 pts]:
   - Are two different models specified

     Yes, linear and gamma models [1/1]
   - Is difference between two models explained

     Yes [1/1]
   - Is the difference in the models justified (e.g. does adding additional parameter makes sense)

     Yes, linear model shows relationship and gamma provides positive continuous durations [1/1]
   - Are models sufficiently described (what are formulas, what are parameters, what data are required)

     Yes, they are well described in model description [1/1]
4. Priors [0-4 pts]:

- Is it explained why particular priors for parameters were selected

  Yes, they are selected for four considerations [1/1]
- Have prior predictive checks been done for parameters (are parameters simulated from priors make sense)

  Yes, checked params are alpha, beta, gamma [1/1]
- Have prior predictive checks been done for measurements (are measurements simulated from priors make sense)

  Yes, it is a partly overlap between real and simulated data [1/1]
- How prior parameters were selected

  Yes, they were selected half-empirically [1/1]

5. Posterior analysis (model 1) [0-4 pts]:
   - Were there any issues with the sampling? If were what kind of ideas for mitigation were used

     Yes, there are few warnings with overshooting the limitation [0/1]
   - Are the samples from posterior predictive distribution analyzed

     Yes, they are described [1/1]
   - Are the data consistent with posterior predictive samples and is it sufficiently commented (if they are not then is the justification provided)

     Yes, they are consistent with briefly description [1/1]
   - Have parameter marginal distributions been analyzed (histograms of individual parameters plus summaries, are they diffuse or concentrated, what can we say about values)

     Partially, there are histograms without descriptions [0.5/1]
6. Posterior analysis (model 2) [0-4 pts]:
   - Were there any issues with the sampling? If were what kind of ideas for mitigation were used

     No warnings or errors [1/1]
   - Are the samples from posterior predictive distribution analyzed

     Yes, they are described [1/1]
   - Are the data consistent with posterior predictive samples and is it sufficiently commented (if they are not then is the justification provided)

     Yes, data and simulated values are consistent [1/1]
   - Have parameter marginal distributions been analyzed (histograms of individual parameters plus summaries, are they diffuse or concentrated, what can we say about values)

Partially, there are histograms without descriptions [0.5/1]

7. Model comparison [0-4 pts]
    - Have models been compared using information criteria

      Yes, WAIC and LOO criterias [1/1]
    - Have result for WAIC been discussed (is there a clear winner, or is there an overlap, were there any warnings)

      Yes, it is briefly discussed [1/1]
    - Have result for PSIS-LOO been discussed (is there a clear winner, or is there an overlap, were there any warnings)

      Yes, it is briefly discussed [1/1]
    - What the model comparison discussed? Do authors agree with information criteria? Why in your opinion one model is better than another

      Yes, comparison is discussed. Model with additional param is better [1/1]

SUM: 25/27 -> 92,6%