

# Assessing the Risk of Various Sludge Retention Times in the activated sludge process, and their Impact on Sewage Sludge Stabilization Indicators

Eva Gega, Steffen Krause, Christian Schaum

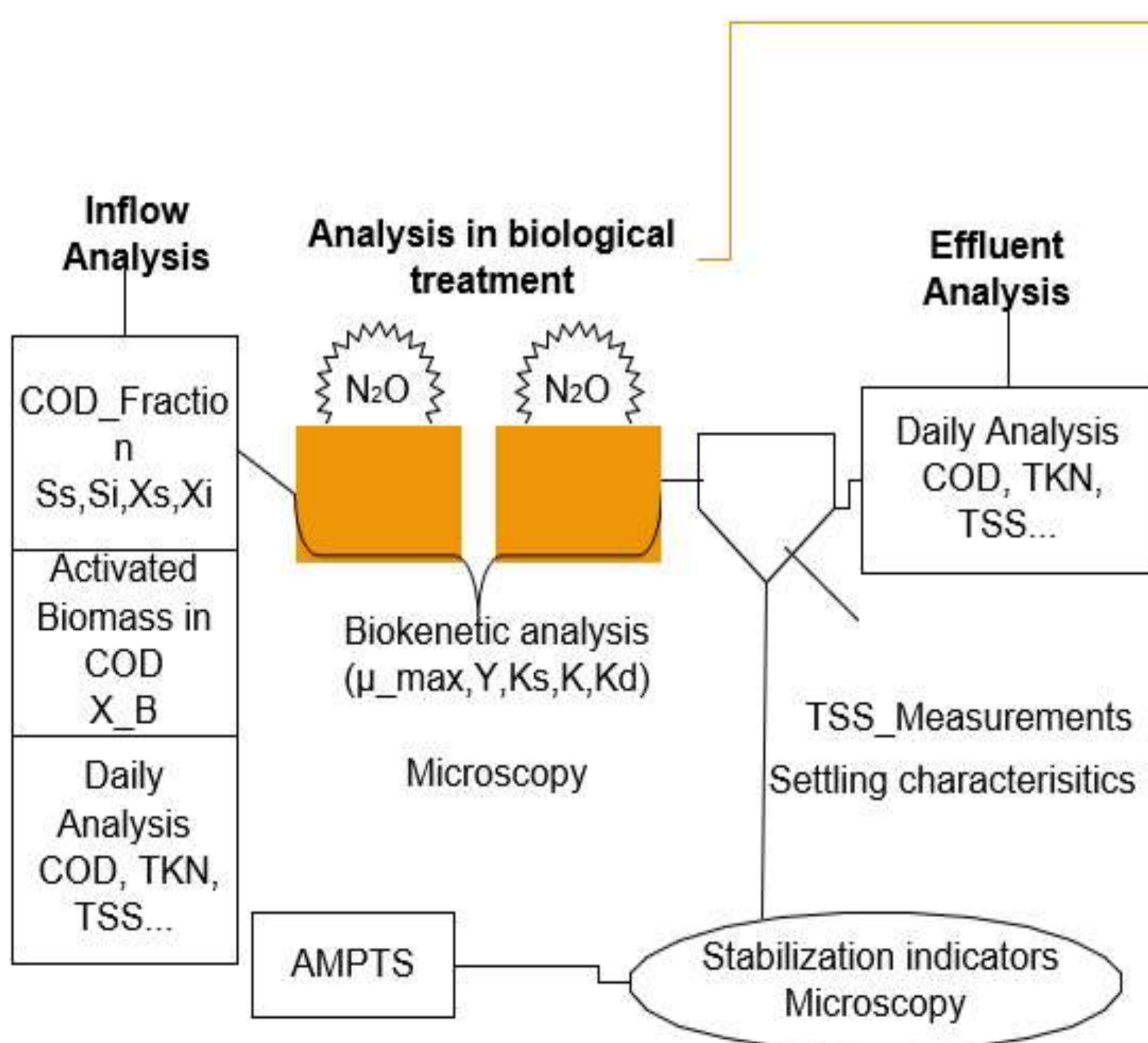
## Introduction and Aim

Solid Retention Time (SRT), also known as sludge age, is a critical parameter in wastewater treatment plants. SRT significantly influences the biological processes responsible for pollutant removal and compliance with effluent quality standards. To ensure optimal performance of the activated sludge process (ASP), it is essential to adjust the sludge age in response to temperature variations.

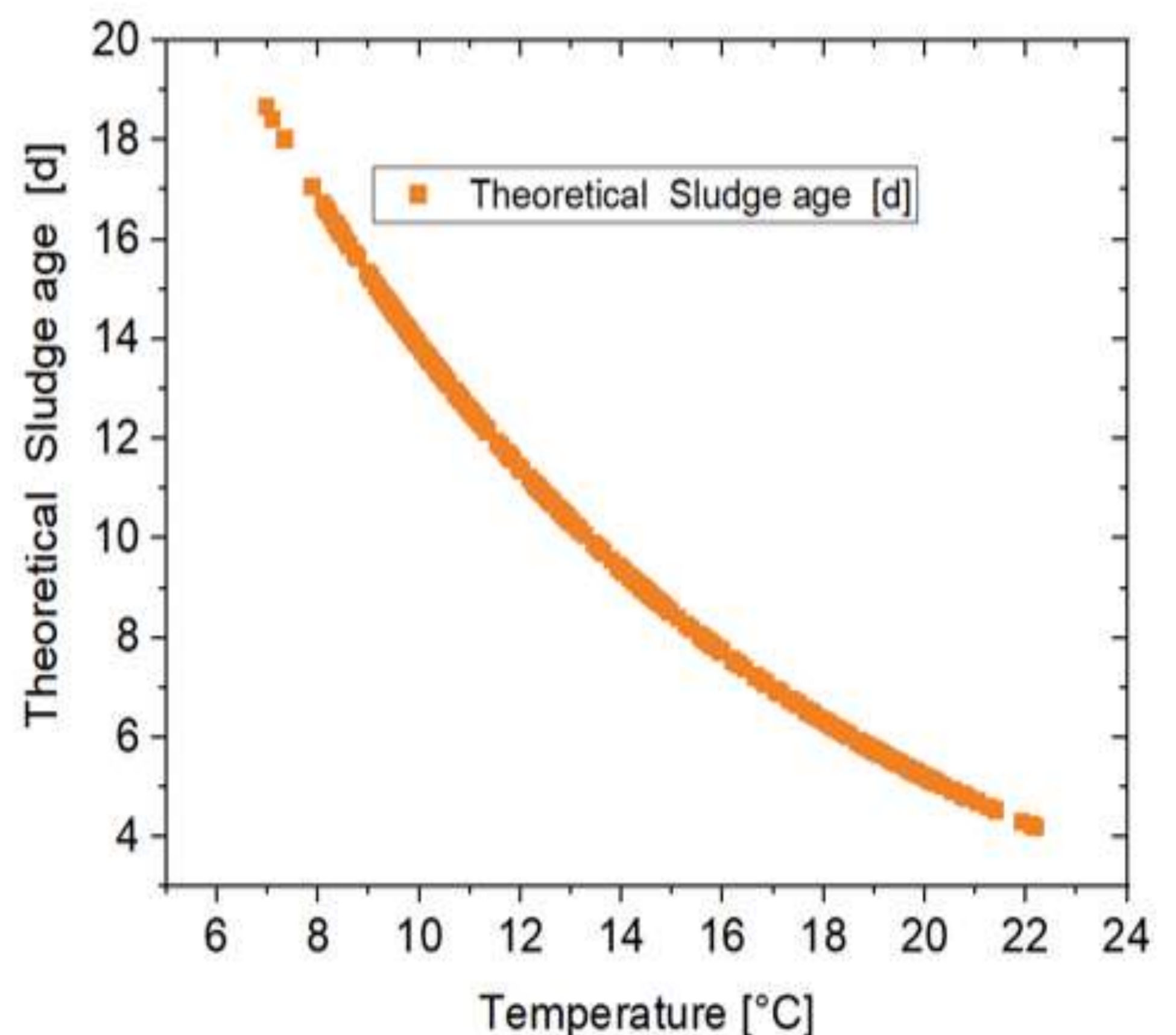


- The objective of this study is to evaluate the adjustment of operating parameters under different temperature conditions, with particular emphasis on optimizing sludge age. In addition, we aim to analyze the aerobic stability of sewage sludge over different temperature ranges and sludge age.
- Furthermore, our investigation will examine the effect of different SRT in the chemical oxygen demand (COD) fraction including the active biomass of COD.

## Methodology



**Model: Process Optimization**  
Optimization of SRT and other operating parameters under different temperature variations



**Figure 1:** The required theoretical sludge age for each temperature

