

# SAFTE-R

Apply the SAFTE model to sleep data.

## Introduction

SAFTE-R is a package written for R that applies the Sleep, Activity, Fatigue, and Task Effectiveness (SAFTE) model to previously collected sleep data. The SAFTE model is a biomathematical framework that predicts human cognitive performance based on previous sleep patterns.

SAFTE-R is based on the original patented model under expired US Patent No. 6,579,233 Entitled: System and Method for Evaluating Task Effectiveness Based on Sleep Pattern. SAFTE-R was constructed using the original functions and algorithms provided by and under the supervision of SAFTE model inventor Dr. Steven Hursh.

This R package should not be confused with similarly trademarked product names, such as SAFTE (Fatigue Science) or SAFTE-FAST (Institutes for Behavior Resources, Inc.). SAFTE-R is limited to the use of the original patented SAFTE model equations and does not include features specific to the commercial SAFTE-FAST software:

- scheduling insights
- Auto-Sleep or automated sleep estimation
- graphical user interface to interact with the data
- data importing from scheduling systems
- batch processing of large data sets
- a mechanism to phase-shift the model resulting from shift work or transmeridian travel
- does not consider geographic location or light exposure based on location or time of year
- does not include derived performance metrics or subjective alertness scores
- does not include any improvements to the original model made since the time of the patent.

The SAFTE-R package is intended for use by students, scholars, and scientific researchers as a freely available research tool and is not intended to be used, marketed, or sold as a product or as a service for profit.