PROTERIAL
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底盘电线弯曲耐久解析（EPB・EMB线束等）

Development of cables to be routed near automobile wheels using bending durability simulation
EPB：Electric Parking Brake harness
EMB：Electric Mechanical Brake harness

通过电线弯曲耐久解析技术，根据客户需求可设计开发各类底盘线束产品(WSS+EPB、EMB、IWM等)。

A variety of unsprung harness products（WSS+EPB, EMB, IWM, etc.）tailored to customers' needs have been developed, using advanced bending simulation and bending durability prediction.

底盘/悬架

概 要

- ✓ **根据客户・车型的不同可预测不同条件下的电线弯曲耐久寿命**
  It is possible to predict the cable bending fatigue life based various conditions depending on customers and vehicle models.
- ✓ **根据不同条件设计最佳电线以兼顾产品的高性价比**
  Optimal cable design for each condition enables both reliability and cost
- ✓ **通过解析技术可避免多次耐久试验从而缩短试验周期**
  Shorter lead times by eliminating rework of endurance tests that take a long time

用途

电子驻车制动线束
电子制动线束
轮毂电机用线束等

Electric Parking Brake harness.
Electric Mechanical Brake harness.
In-Wheel Motor harness ,etc.

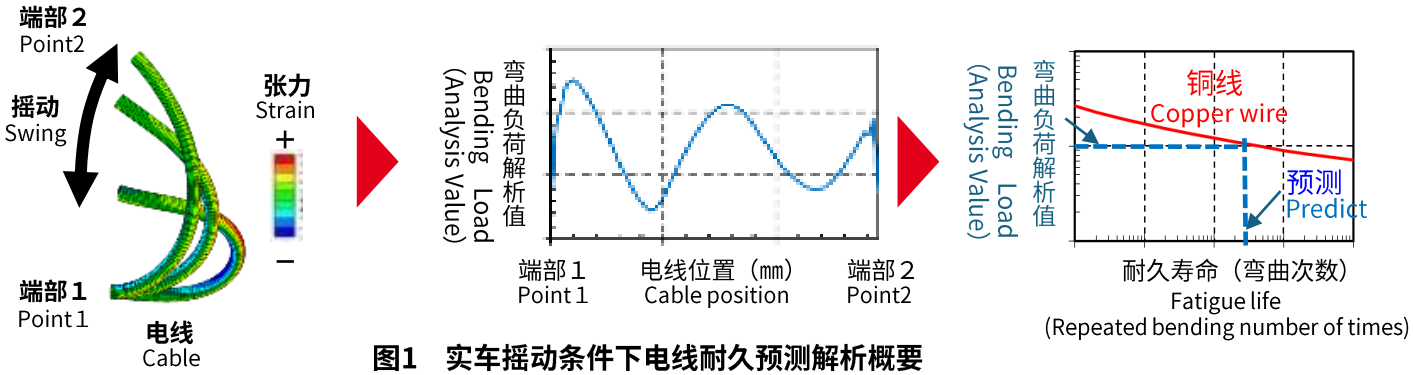

图1　实车摇动条件下电线耐久预测解析概要
Fig.1 Overview of cable fatigue prediction analysis flow under actual vehicle conditions.

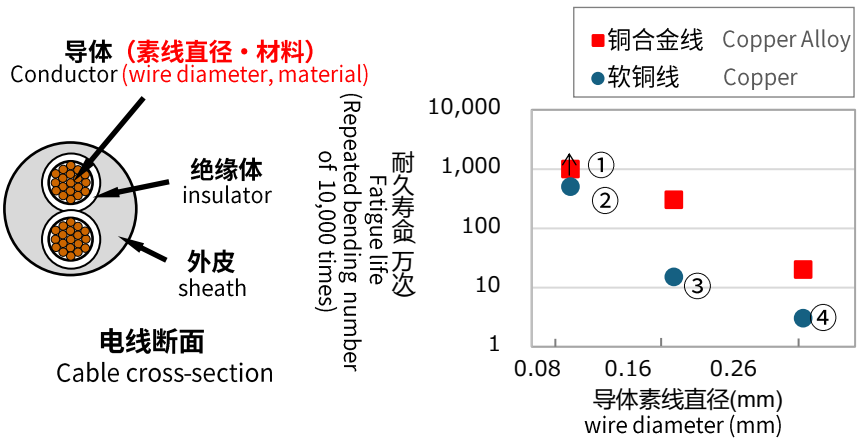

图2　各类导体耐久寿命预测示例
Fig.2 Example of fatigue life prediction for various conductors

表 1.各规格耐久寿命和成本示例
Table 1: Examples of fatigue life and cost t for each specification

素线规格 element wire spec	耐久寿命 Fatigue life	低成本顺序 Rank from Lowest to highest of cost
① 铜合金线 Copper Alloy ϕ0.08mm	1000万次以上 More than 10 million times	4
② 软铜线 Copper ϕ0.08mm	500万次 5 million times	3
③ 软铜线 Copper ϕ0.16mm	15万次 150,000 times	2
④ 软铜线 Copper ϕ0.26mm	3万次 30,000 times	1